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Railway Age Gazette

Volume 62

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No. 5

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GENERAL NEWS SECTION

*Illustrated.

An eastern newspaper publishes an editorial taking the railways to task for not buying equipment and supplies in large

Unintelligence in Business Management

quantities when the prices were low, in consequence of which they are now obliged to buy them when the prices are high. It concedes that the cost of labor is a thing over which the managements have little control, but "the purchase of equipment," it says, "is a thing over which they have direct control and they do it unintelligently. Obviously the ideal time to put equipment and plant in good shape to meet the heavy demands which fall upon the roads in prosperous times is during the period of depression, when prices are low and deliveries can be had within a reasonable time." True enough! But do the railways do their buying so much more "unintelligently" than other business concerns? Take, for example, the publishers of newspapers and magazines. There is a business with which for obvious reasons the *Railway Age Gazette* is well acquainted. How many of the wise publishers foresaw the recent heavy increase in the cost of white paper, and, when prices were low and deliveries prompt, laid in large supplies of it? Very few; most publishing concerns acted very "unintelligently." How many manufacturers foresaw the great increases which have occurred in the prices of fuel and raw materials and laid in quantities adequate to tide them over the present period of high prices? Very few; the business of manufacturing also is "unintelligently" conducted. As the railways are almost the only concerns which thus far have borne the increases in the cost of labor and in the cost of equipment and supplies without offsetting them by increases in the prices they receive, it ill becomes persons in the publishing, manufacturing or other lines of business to talk about the "unintelligence" and inefficiency of railroad management.

The Interstate Commerce Commission has been subjected to criticism because of the advisers it has chosen for the division

The Valuation Advisory Board

of valuation and the understanding that Prof. John H. Gray of the University of Minnesota has been given a leave of absence from the university in order that he may accept an appointment as a member of this advisory board is likely to lead to further criticism of the same kind. The vacancy on the board

was created by the resignation of Milo R. Maltbie, because of a dispute as to whether he could satisfactorily hold this position and that of city chamberlain of New York at the same time. The other members of the board are Charles F. Staples, formerly of the Minnesota Railroad Commission, and E. W. Bemis, a valuation engineer, both of whom, like Prof. Gray, have earned reputations for being exceedingly hostile to the railroads. No one questions the right of Prof. Gray or that of any other member of the board to entertain any view he may consider sound, but it is a fact that he has been one of the most partisan critics of the railways and one of the most extreme radicals on the subject of railroad valuation in the United States. Such an appointment would be most unfortunate because it seems hardly fitting that a board of this kind should be made up entirely of men whose attitude has been that of unreserved antagonism to the companies whose property is to be valued. Prof. Gray has indicated on numerous occasions that he believes practically everything in the management of the railways is wrong and he has been an outspoken advocate of government ownership of railways. As a member of the board, he would take part in the valuation of properties which he has repeatedly denounced as overcapitalized. The commission ought to be able to find at least one man that it would deem fitted to serve on such a board who has not made his reputation as a critic of the railways.

The net operating income of the railways of the United States for November, 1916, according to the report just issued

Decline in Net Operating Income

by the Interstate Commerce Commission, shows a decline for the first time since January, 1915. This means that the increase in operating expenses and taxes, which has been going on for over a year, has at last caught up with the increases in gross earnings. The railway net operating income for November was \$101,717,000, or \$441 a mile, as compared with \$103,006,000 in November, 1915, or \$449 a mile. The total operating revenues increased from \$1,303 to \$1,396 per mile and operating expenses increased by the same number of dollars per mile, from \$801 to \$894, so that the net operating revenue, \$502, was the same as for November, 1915. Taxes, however, increased from \$53 to \$61 per mile, which makes the decrease in net operating income \$8 per mile. The reduc-

tion is brought about by the railroads in the eastern district, which show a decline in net operating revenue from \$800 to \$720 a mile, due to an increase in expenses of over \$200 per mile. Their taxes also increased from \$79 to \$97 a mile, so that the net operating income of the eastern railways was only \$623, as compared with \$721 in 1915. The southern and western roads still show greater increases in revenue than in expenses. For a considerable period after the increased volume of traffic began the railways were able to control their operating expenses so that they did not increase in proportion, but, on the eastern roads in particular, where the congestion of traffic has been most felt, the expenses have been increasing faster proportionately than the earnings for some time. The increases in net operating income, which have been shown since February 1, 1915, were due for several months to a reduction in operating expenses greater than the decline in gross earnings, which was still being shown in comparison with 1914, and when the increase in earnings began, about July, 1915, the expenses still showed a comparative decrease until about November. The end of the large increases in net which have caused so much comment during the past year was foreshadowed, however, by the report for September, when with an increase of 12.6 per cent in earnings per mile the operating expenses increased 13.8 per cent. In October the increase in earnings was somewhat less, 10.8 per cent, while the increase in expense was 11.7 per cent. The increase in expenses are principally in the department of conducting transportation, although there have been considerable increases in maintenance. Taxes have been showing large increases throughout the year.

THE FUTURE OF TIMBER PRESERVATION

THE development periods of many industries are characterized by "growing pains" in the form of severe competition and resort to sharp practices of one kind or another. The wood preserving industry has been passing through such an experience and its development has been seriously retarded by cut-throat competition and unfair practices within its ranks. The very existence of the American Wood Preservers' Association has been endangered at times by the conflict between different interests in this field. For this reason the results of the convention of last week are of more than passing interest to the railways, which consume over 90 per cent of all the timber treated. The indication of greatest progress in this association during the past year was the endeavor to submerge individual interests in large measure to the common good of the industry. As a result, several of the committees were able to present constructive recommendations and specifications, adherence to which will go far to create greater confidence in the product and insure its high quality. For the good of the industry and in fact for its very existence, it is necessary that this improvement continue.

The association has important work ahead. Much educational work regarding the merits of treated timber still remains to be done among railways as well as among other users. For instance, although the roads use nearly all of the timber treated at the present time, less than 40 per cent of the ties which can be treated economically are at present so protected and the ratio is even larger in building timbers, etc.

Another problem of pressing importance is that of the supply of preservatives. Only a part of the creosote used is made in this country. Since the inauguration of the war, all importations from Germany have been cut off. During the year ending June 30, 1916, approximately 34,000,000 gals., or between 35 and 45 per cent of the total amount used in the United States came from England, but the British Government has recently announced its intention to commandeer a large part or all of this oil for fuel purposes. If this becomes effective it will throw the timber-treating industry into

the condition which existed late in 1914, when some plants were forced to close down and others to change over to other processes. Problems such as these require intelligent, co-operative attention by all concerned and those in the industry owe it to the railroads and their other patrons to get together as soon as possible.

CONTEST ON APPLIANCE EXHIBIT

THE exhibit of the National Railway Appliances Association, held in the Coliseum, Chicago, March 19 to 22, in connection with the stated meeting of the Railway Signal Association and the annual convention of the American Railway Engineering Association, affords a great opportunity for a study of railway signal and maintenance of way devices and materials. Because this exhibit has become an annual affair its magnitude, scope and educational value are not always appreciated by those who visit it every year, with the result that full advantage is not always taken of the opportunities it offers for thorough study of new appliances. In order to direct to the attention of railway men the educational value of this exhibit and insure the greatest possible benefits to the railroads from the visits made by their officers and employees, the *Railway Age Gazette*, the Railway Maintenance Engineer and the Railway Signal Engineer—all published by the Simmons-Boardman Publishing Company—have united in conducting a contest for the best papers on this exhibit.

This contest is divided into two main sections; one for those interested primarily in maintenance of way matters, and one for those interested primarily in signaling matters. The *Railway Age Gazette* and the "Railway Maintenance Engineer" jointly offer a first prize of \$50, a second prize of \$25 and a third prize of \$10 for the best discussions of the things of practical value to be learned from the exhibits of devices and materials used in maintenance of way and structures. The *Railway Age Gazette* and the "Railway Signal Engineer" also jointly offer a first prize of \$50, a second prize of \$25 and a third prize of \$10 for similar discussions of the value of the exhibit of signal devices and materials.

In order to encourage men to study the exhibits that may be somewhat outside their own field, these three journals jointly offer a single prize of \$60 for the best paper covering the exhibit as a whole, with the understanding that no individual will be awarded more than one prize. Any paper received which covers both maintenance and signal exhibits will be considered for this combination prize, and those that fail to win it will still be eligible for consideration in the two main divisions of the contest. If the author does not specify whether this paper is primarily on maintenance or signaling exhibits, it will be placed in the group to which, in the judgment of the editors, it seems best suited.

This contest is open to any one employed in railway service. Papers may be of any length, not exceeding 2,500 words, and should be mailed to the editor of the *Railway Age Gazette*, 608 South Dearborn street, Chicago, not later than April 9, 1917. The prizes for the Maintenance of Way Contest will be awarded by three railway engineering or maintenance officers and that for the Signal contest by three railway signal officers. The \$60 general prize will be awarded by a special board consisting of a railway executive officer and the chairmen of the two committees referred to above. In making the award the judges will consider (1) the practical value of the information which the writers present, based upon their study of the exhibit and the extent to which the information will be of direct service to those who have not attended the display; (2) the value of the suggestions offered to make the exhibit of greater benefit to railway men and (3) the clearness and conciseness with which they cover the exhibit.

In preparing these papers it is desired that the writers

treat devices and materials by classes rather than as the products of individual manufacturers, and that the names of companies be used only when necessary to make the meaning clear.

WHAT IS IT ALL FOR?

THE hearing before the Interstate Commerce Commission at Washington this week on the first tentative valuation reports took a surprising turn when it was indicated that the commission may decide that it is not required or authorized to place definite final values on the properties of the railroads, but that it is merely assembling information which can be used later in the determination of value. Commissioner Clements admitted that the commission had reached this decision tentatively but emphasized the fact that it is prepared to hear arguments on all questions pertaining to the valuation. However, A. E. Helm, counsel for the Kansas commission, announced that the state commissions would contend for such a construction of the law and the impression was created that the commission intends to avoid placing any definite values on the railroads.

Such a decision would be astounding. Everybody has assumed since the valuation act was passed that, without any question, the commission was instructed to make a valuation of the property of the railroads. This assumption has been based not only on the plain provisions of the law, and the intent of Congress when it passed the law, but on practically the entire discussion of the subject since the work was begun. The understanding has always been that the law requires the commission to ascertain and report not only the various elements of value, but from those elements to decide upon the actual value, and a careful reading of the law makes it seem preposterous that any other such interpretation should be placed upon it.

Such expressions as this are found in the act:

... the commission shall, as hereinafter provided, investigate, ascertain and report the value of all the property owned or used by every common carrier, subject to the provisions of the act.

... the commission shall make an inventory which shall list the property of every common carrier subject to the provisions of this act in detail, and show the value thereof.

Upon the completion of the valuation herein provided for the commission ... shall from time to time, revise and correct its valuations.

Whenever the commission shall have completed the tentative valuation of the property of any common carrier, as herein directed, and before such valuation shall become final, the commission shall give notice ... stating the valuation placed upon the several classes of property of said carrier. ... If no protest is filed within 30 days, said valuation shall become final as of the date thereof.

If after hearing any protest of such tentative valuation under the provisions of this act, the commission shall be of the opinion that its valuation should not become final, it shall make such changes as may be necessary and shall issue an order making such corrected tentative valuation final as of the date thereof. All final valuations by the commission and the classification thereof shall be prima facie evidence of the value of the property in all proceedings under the act to regulate commerce.

If upon the trial of any action involving a final value fixed by the commission, evidence shall be introduced regarding such value which is found by the court to be different from that offered upon the hearing before the commission ... the commission shall consider the same and may fix a final value different from the one fixed in the first instance.

It shall be the duty of every common carrier by railroad whose property is being valued.

The act prescribes in detail the various elements which the commission is to ascertain and report and provides for giving notice of the tentative valuation and for the issuance of the final valuation after hearing protests. If this does not call for a specific finding of valuation it is difficult to understand how the English language could have been made to do so.

The law providing for a valuation of the property of the railroads of the United States was passed four years ago and an enormous organization has been built up to carry on the work. The total expense involved to date has been over fifteen million dollars, of which the government has borne over five and a half millions and the railroads over nine and a half millions. If the purpose is not to find the value of the

railroads, what is this money being spent for? It is a well known fact that the railroads did not ask for a valuation; in fact, leading railroad men for years have taken the position that valuation is not a practical basis for the making of rates, because of the effect of competition and the innumerable other conditions which enter into the problem. When, however, the valuation plan was urged by persons whose attitude had not been friendly to the railroads, they refrained from making any opposition and when the act was passed they formed an organization and have co-operated loyally with the commission. While the railroads have never regarded valuation as a practical basis for making rates, they have been so confident of the valuations which the commission would make that they have believed that when they are completed they would constitute a complete answer to the charge that the railroads as a whole are over-capitalized. They have even gone so far as to think that, from that point of view, the results of the valuation might well be worth the cost in promoting a more definite understanding between the railroads and the public. The new attitude as to what is to be accomplished by the valuation puts an entirely new face on the whole matter.

The division of valuation has apparently taken the position that instead of finding the true value of the railroad property, all it is required to do is to make a partial inventory for use at some future time. Apparently in pursuance of this idea, the commission has recently issued several partial inventories, calling them tentative valuation reports. If a true valuation is not to be found the only effect of publishing the tentative valuations is to attack the credit of every railroad in the country and aggravate the disease which the railroads thought a true valuation would tend to cure. If no final value is to be ascertained, this information will be made available for the state authorities to warp as they see fit. The Interstate Commerce Commission might use one valuation for the purpose of fixing interstate rates while the states could put their own construction on the facts and use an entirely different basis for fixing state rates.

The railroads are not afraid to have the commission go on and complete its work. Since it has proceeded so far, the roads doubtless prefer that it shall be finished and that a valuation shall be ascertained. If the commission does not intend to go on, as the law contemplates, and ascertain the various elements of value and from them determine a final valuation, the entire proceeding might as well be dropped at once. In fact, it is not unlikely that if the commission should sustain the contention expressed at the hearing it will be only a short time before it will drop of its own weight.

INCREASING THE TRAIN LOAD

IN 1902 the average revenue train load of the Burlington was 200 tons, while in 1916 it was 558 tons. In other words, the average tonnage of revenue freight handled per train on this western road was increased 179 per cent in 14 years. Similarly the revenue freight train load of the Baltimore & Ohio was increased from 442 tons in 1910 to 663 tons in 1916, or 72 per cent in 6 years. These increases have occurred to a greater or less extent on many other roads, but they are far from universal. Where marked improvement has been made, it will be found that almost without exception, it has resulted from definite campaigns and the concentration of attention on this particular phase of train handling.

Since earnings are measured in ton miles, while operating expenses are counted in train miles, the economy of increasing the tons handled per train should be self-evident. A common objection offered to heavy train loading is the delay to cars resulting from holding them in yards to fill out trains, but an analysis of actual performance on an average railway with moderately heavy traffic shows that this supposed disadvantage is not of material consequence. The relation be-

tween train loading and net earnings is so close that this subject warrants the closest consideration by all operating officers.

In order to impress our readers with the importance of this subject and to draw out for their information the methods which have been developed on those roads which have given this subject close attention we announce a contest on Increasing the Train Load. Contributions to this contest are solicited from those who have given this subject careful consideration and are in a position to describe methods which have been found to aid in increasing the train load. The problem has many angles and it has been approached from different directions on various roads. Prizes of \$35 and \$25 will be paid for the two best papers received, while others accepted and published will be paid for at our regular space rates. The judges will base their awards primarily on the practicability of the ideas presented and on the completeness with which the subject is discussed. Contributions should be sent to the editor of the *Railway Age Gazette*, 608 South Dearborn street, Chicago, and must be received not later than April 1, to be considered by the judges.

MORE THOUGHTS ON GOVERNMENT OWNERSHIP IN CANADA

THE results of government management of railways in Canada have been the subject of much discussion in the *Railway Age Gazette* within recent months. J. L. Payne, comptroller of statistics of the Department of Railways and Canals, who has often shown in our columns that he is not only an able statistician, but also a very lucid, interesting and forceful writer, has written a second article on this subject, in which he replies to two articles which we recently published. Two articles entitled "The Failure of Government Ownership in Canada" appeared in the *Railway Age Gazette* for July 14 and July 21, 1916. Mr. Payne made a reply to them, which was published in the issue of October 6. A reply to this article of Mr. Payne was published in the issue of October 13, and in the issue of December 15 appeared a further reply, prepared by Francis A. Bonner. The present editorial will not attempt to make any general answer to Mr. Payne's second article, which appears elsewhere in this issue, but there are certain statements in it which seem to demand some attention.

He says: "The human factor, I am convinced, rises high over everything else in the matter of railway administration; all else depends on conditions. One set of men will succeed where another set would fail." This is a very important point, but one that often is overlooked. The opposition of the *Railway Age Gazette* to government ownership under such democratic governmental conditions as exist in the United States and Canada is based largely on the ground that the government would not ordinarily intrust the administration of the railways to as able and expert men as the managers employed by private companies. Is it not true that ordinarily large private business concerns in both countries have employed men for important positions solely because of their experience and ability, while the usual practice in public affairs has been to fill administrative positions with men selected not because of their special qualifications, but for political reasons? And if this has been the case in the past, is it not evidence that under government ownership of railways the human factor is less likely to be favorable to efficient administration than it is under private ownership?

Mr. Payne says it is dangerous to base arguments against government ownership on the ground that state railways do not earn substantial profits, because, as he asserts, "there are over 2,000 corporate railways in the United States and less than one-tenth that number in Canada," and less than 10 per cent. of them have ever earned a dividend. It may be that not 10 per cent of the "corporate railways" have never

earned a dividend, but measured by their mileage and the volume of their transactions, very much more than 10 per cent of the railways in the United States and Canada have earned dividends. There have been many railway bankruptcies in the United States, but except in periods of great adversity, our railways have earned interest on practically all their bonds, and for a good many years they usually have earned and paid dividends on two-thirds of their stock. This is a very different showing from that of the Intercolonial, which, on the whole, has not only earned no interest, but has even failed to earn its operating expenses.

Mr. Payne says: "Surely insufficient rates on a state railway, implemented by taxation on the whole people, are preferable to high rates and an unnecessary surplus." This is not necessarily true. The real question from the standpoint of the public welfare is: Is the total expense to which the public is put to get a given amount of traffic handled greater under government ownership or under private ownership? What the total cost of transportation to the public will be under either policy will depend mainly on the efficiency with which the railways are managed; and it is quite conceivable that the "insufficient rates" charged by a state railway plus the taxes imposed, to secure the handling of a given traffic, may exceed the rates imposed by private railways for the handling of the same amount of traffic, even though the rates of the private railways result in "unnecessary surplus." As Mr. Payne well says, the human factor is the main factor, and the very same rates which on an inefficiently managed railroad result in deficits may on an efficiently managed railroad yield interest, dividends and surpluses.

Mr. Payne says that Mr. Bonner attempted to show that the difference between the average rates on the Canadian Pacific, Eastern Lines, and the Intercolonial "is due wholly to the proportions of high grade and low grade commodities hauled." This is evidently a slip of the pen, since Mr. Bonner contended that the difference in the average receipts per ton mile and per passenger mile were due partly to differences in the character of the traffic and partly to differences in the length of the lines over which the traffic moved.

Mr. Payne indicates that the improved financial results now being secured on the Intercolonial are due to recent increases in its rates, and says that these improved results have been secured under the same management that handled the affairs of the road in 1913. Our understanding is that Mr. Gutelius did not become general manager until late in the fiscal year 1913. Furthermore, the improved financial results secured in the fiscal year 1916 were largely due to a substantial reduction in operating expenses, in spite of the fact that an increased traffic was handled.

Mr. Payne says near his conclusion: "To make out a perfect case against government ownership, as exemplified by the experience of the Intercolonial, I would respectfully suggest that two things must be proven; first, that mismanagement is an inherent consequence of state control, and second, that it is invariably absent from private control." This does not seem to us a fair statement of the matter. The question of government versus private ownership should always be considered in the light of the conditions existing in the particular country in which the question is to be settled. Therefore, the question to be considered in the United States, for example, is: Under such conditions, political, economic, social and otherwise as exist in this country, does government ownership, as exemplified by the experience of other countries where it has been tried, ordinarily produce better or worse results than private ownership? The Intercolonial is owned and operated by the government of a country where democratic conditions prevail. Therefore, according as its results have been good or bad they afforded an argument for or against the adoption of government ownership under democratic conditions. The *Railway Age Gazette* has never sought to make out a perfect case against government ownership by

citing the example of the Intercolonial, but has simply presented its results as a part of the evidence in the case of government versus private ownership. It would, of course, be impossible to prove that "mismanagement is an inherent consequence of state control and is invariably absent from private control," but it would also be impossible to prove that mismanagement is an inherent consequence of private control and is invariably absent from state control.

NEW BOOKS

Tool Foremen's Association Proceedings. Edited by R. D. Fletcher, secretary of the association, Belt Railway of Chicago. 155 pages. Illustrated. 6 in. by 9 in. Bound in paper. Published by the association.

The proceedings of the eighth annual convention of the American Railway Tool Foremen's Association which was held at the Hotel Sherman, Chicago, Ill., August 24, 25 and 26, contains a discussion of the heat treatment of tool steel, special tools for steel car repairs, devices for reclaiming material, special tools and devices for the forge shops, emery wheels as applied to locomotive repairs, and jigs and devices for engine house use.

American Railway Association; Proceedings; Volume VII; May, 1912, to November, 1915, inclusive. 1,222 pages, 9 in. x 11 1/4 in. Bound in cloth. Published by the Association, 75 Church street, New York City. Price \$6.

This well-known series of bound volumes needs no introduction. The meetings of the association held during the three years embraced in this volume dealt with a great number of important questions and the volume contains numerous standards adopted by the association. Among these are the Continuous Home Route Card, rules for demurrage on freight cars, rules for loading freight in less than carloads, and the Standard Code of Train Rules, as revised November 17, 1915. William F. Allen, the veteran secretary of the association, died on November 9, 1915, and this volume contains resolutions adopted in his memory.

Statistics of Railways, 1905-1915. Compiled by the Bureau of Railway Economics, Washington, D. C. 57 pages, 6 in. by 9 in.

Bulletin No. 103, just issued by the Bureau of Railway Economics, is its annual compilation presenting in a form suitable for convenient reference the principal aspects of railway operation in the United States as shown by official statistics with comparisons for the ten preceding years. The statistics are those of the Interstate Commerce Commission but the comparative arrangement in a small volume is an especially useful one to all who have occasion to use these figures frequently because it gives in tabular form information which it would otherwise be necessary to obtain from ten separate volumes. Previous issues of this series of bulletins have been reviewed in the *Railway Age Gazette* and the plan is the same that has been followed in the past except that additional tables have been included which add to the usefulness of the compilation. The Interstate Commerce Commission figures for the years prior to 1911, which were arranged by ten territorial groups, have been combined into the three districts which the commission has used since that time. The information given is included under the heads of population and area; railway mileage; property investment; capital securities and dividends; revenues, expenses and taxes; employees and compensation; equipment; freight and passenger traffic statistics, and accidents and grade crossings. The new material includes statistics of capital securities of switching and terminal companies for 1915; investment in road and equipment; steel and steel underframe cars in service in 1915; and grade crossings and their elimination for 1915. The statistics on employees and their compensation for 1915 are given on the new basis adopted by the Interstate Commerce Commission, relating to the average number in service during the year, and subdividing the various classes of employees, and are therefore not comparable with those for previous years.

Letters to the Editor

THE WIDE FIREBOX

NEW YORK.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have just seen the letter of J. Snowden Bell in the edition of November 17, in which he takes issue with you for the credit given Theodore N. Ely for the placing of the firebox on top of the frames instead of between them, and claims priority of invention therefor for James Milholland of the Philadelphia & Reading under date of 1859 or 1860. He is correct so far as the mere location is concerned and he might have gone even farther and shown how the Wootten firebox was in use on the anthracite roads when Mr. Ely designed his class K in 1881. But this is not the whole story. The criticism that was showered upon Mr. Ely was not that he was putting the foundation ring on top of the frame, but that he was raising the center of gravity of his engine to a dangerous height. No such criticism could possibly be made regarding Milholland's engine.

As an example of the sentiment of the time I may cite a bit of personal experience. In 1880 I was locomotive draughtsman on the Hudson River Railroad and had my drawing table in the office of William Buchanan, who was master mechanic. In the latter part of that year, as I recollect it, there was a meeting there of M. N. Forney, Peter McQueen and Mr. Buchanan. Mr. Forney had gained a wide reputation by his catechism. Mr. McQueen was with the Schenectady Locomotive Works and the output of that establishment was known as the McQueen engines.

At this interview the subject of the increase in the size of the locomotive was discussed from every angle; and, when the party broke up, they were quite agreed that the locomotive had reached the limits of its size, because of the impossibility of increasing the size of the boiler. When the other gentlemen had gone, Mr. Buchanan turned to me and said: "It is a very easy matter to build an engine that will run 60 miles an hour, but quite a different thing to build one that will run 60 miles an hour and haul a dozen sleeping cars behind it." At that time the largest passenger locomotive on the Hudson River Railroad had 17 in. by 24 in. cylinders and a boiler with about 1,250 sq. ft. heating surface.

Six months later Mr. Ely's class K ran into Jersey City. It had 18 in. by 24 in. cylinders and about 1,750 sq. ft. of heating surface. The solution of the problem was exactly expressed by you when you stated that "Mr. Ely lifted his whole boiler into the air, set his foundation ring on top of the frames, widened his firebox and gave the machine a new lease of life," and this is exactly what was not accomplished by Mr. Milholland.

Here are a few of the comparative dimensions of the two engines:

	Pennsylvania.	Milholland.
Cylinder, diameter	18 in.	14 1/2 in.
Piston stroke	24 in.	20 in.
Approximate heating surface.....	1,750 sq. ft.	1,075 sq. ft.
Diameter of shell.....	50 in.	40 in.
Height of center of shell above rails.....	7 ft. 3 3/4 in.	6 ft. 2 in.
Height of top of shell above rails.....	9 ft. 4 3/4 in.	7 ft. 10 in.
Height of back end of boiler above rails.....	9 ft. 11 3/4 in.	6 ft. 6 in.
Height of foundation ring above rails.....	4 ft. 4 in.	3 ft. 0 in.
Depth of throat sheet.....	2 ft. 0 in.	1 ft. 4 in.
Diameter of driving wheels.....	6 ft. 3 in.	5 ft. 6 in.

It will readily be seen that the Milholland engine was a toy beside the class K, and the mere fact of placing the firebox on top of the frames was but an incidental feature in the design. The Milholland engine had a shallow firebox designed for burning anthracite coal. Its cylinders and boiler were small and no one would have thought of it as unstable.

The class K was a giant for its time and all manner of disaster was predicted for it, and it was only because Mr. Ely had the courage of his convictions that it was built.

Possibly if Mr. Milholland had lived 20 years later, his great inventive genius and initiative would have dared to lift his boiler into the air in order to get the depth of firebox needed to burn bituminous coal. But, as it stands, and without detracting one iota from the credit due him as a progressive engineer, it seems to me that your notice of Mr. Ely ought to stand unchallenged in that he was the first to lift his boiler bodily into the air, and show that a locomotive with the wide firebox, so designed, was a safe and stable machine. Certainly the story of the rapid development of the power of the locomotive and the increase in the tonnage of cars and trains dates from the appearance of the class K in 1881.

GEORGE L. FOWLER.

REPORTING MARKS ON FREIGHT CARS

CHICAGO, Ill.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Those who understand what is back of the proposal are much disappointed at the result of the letter ballot recently taken by the Master Car Builders' Association in connection with the proposed horizontal bars above and below the reporting marks on freight cars. At the same time it is probably true that they, the transportation men themselves, are primarily responsible for the result in having failed to see to it that their respective mechanical department officers understood the importance of the matter. That the American Railway Association was entirely clear on the subject is indicated by the letter written by the general secretary to the secretary of the Master Car Builders' Association. This letter read as follows:

"The Committee on Relations between Railroads in its report, which was presented to The American Railway Association on May 17, 1916, relative to standard lettering on freight cars, stated:

"There are two features in marking cars which it seems to the committee are especially important.

"First, the reporting marks which usually include the initials and number of the cars should be placed on freight cars between two horizontal bars, so located that employees will know exactly where to look for them; and second, the seal pins upon cars should be so marked that accurate records of seals can be readily taken.

"The committee recommends the passage of a resolution requesting the Master Car Builders' Association to take immediate action upon these two points, even if they cannot agree on a general scheme for the uniform placing of all the marks necessary on freight equipment."

"In connection with the foregoing statement, the following resolution was unanimously adopted by the American Railway Association:

"Resolved, That the Master Car Builders' Association be requested to consider again the subject of standard lettering on freight cars, and to take immediate action to provide, first, that the reporting marks shall be placed on freight cars between two horizontal bars, not to exceed eight feet from the top of rail in location now specified for either name or initial, and, second, that seal pins upon cars be so marked that accurate records of seals can be readily taken."

"Will you kindly advise what action is taken on this subject by the Master Car Builders' Association?"

At the twenty-fifth meeting of the Association of Transportation and Car Accounting Officers, J. D. Altimus, chairman of the Committee on Office Methods and Accounting, said:

"This committee feels that it would be an opportune moment to draw the attention of our membership to this letter ballot which will be handled by our master car builders or superintendents of motive power.

"In order that there may be no misunderstanding on this letter ballot, it behooves every member of this association to see his master car builder or superintendent of motive power, and explain fully just what these reporting marks mean. Not only are these reporting marks very essential to the transportation department, but they are also important to the master car builders' department and in order to drive that home to the master car builders, you could point out that in the preparation of the repair bills, the reporting marks and the numbers of the cars are taken by their staffs from the cars. They may state that they do not need these reporting marks between the bars; that they may take the marks as they have for years; but our offices have been checking these repair bills, and if the car accountants will analyze the number of errors in the repair bills, they will be able to trace practically all those errors to the inefficient marking on the cars.

"I could possibly give you some information in regard to checking the repair bills, so far as the Canadian Pacific is concerned, but that would not give you any good material to put before your master car builders' department. It would be better for you to analyze your own reports and point out to the master car builders where their reports have been in error. Also point out the large amount of expense your respective offices are charged with, due to the errors of other lines. You will probably be greatly surprised to find out what there is in it. It is the committee's opinion that if we will each deal with our master car builders' departments along the lines indicated, it will go a long way toward a thorough understanding of the reporting marks when the letter ballot is presented."

If every transportation officer, who believes in the plan, had done his part, or if the officers representing the various companies in the American Railway Association had brought the matter to the attention of their voting representatives in the Master Car Builders' Association, the result would have been very different.

Nothing but an educational campaign of the kind above suggested will bring the desired result and as this result will have to come sooner or later, the sooner it is handled on all lines the better.

E. H. DE GROOT, JR.

Superintendent of Transportation, Chicago & Eastern Illinois.

ONE WAY TO REDUCE LIVE STOCK CLAIMS

HAILEVILLE, Okla.

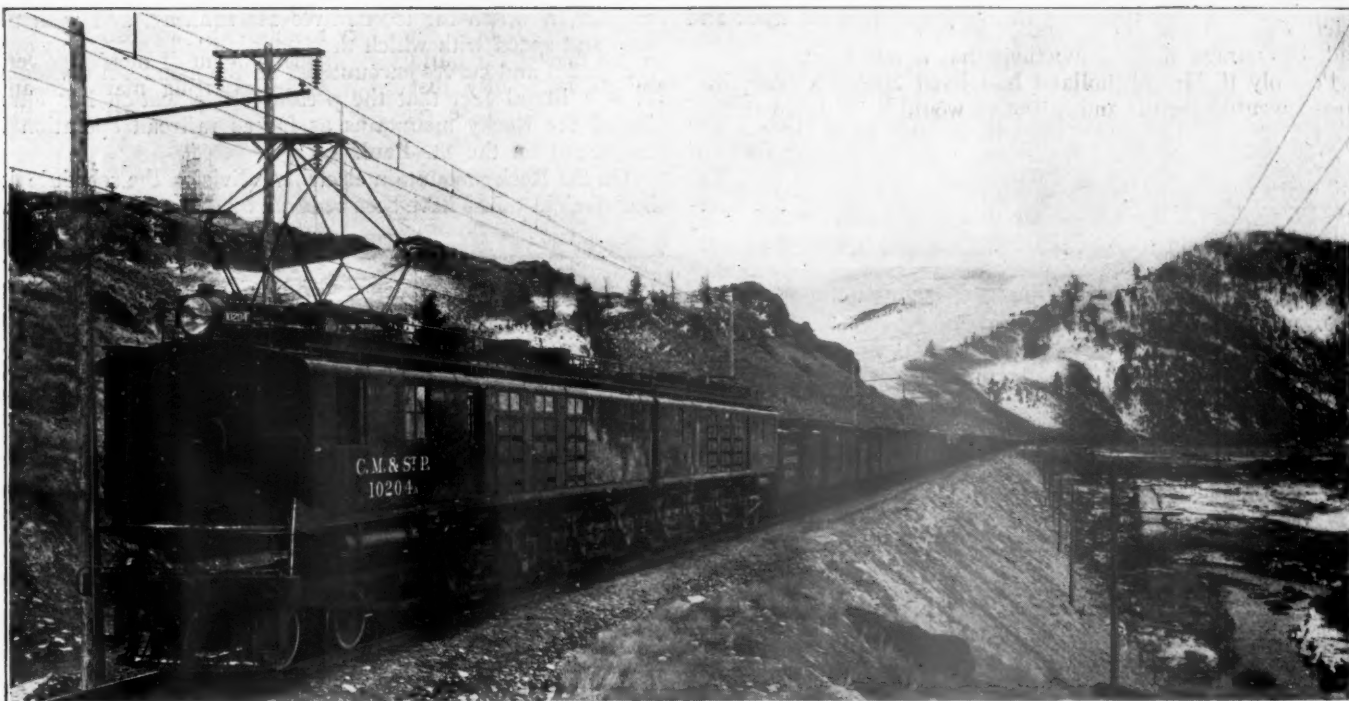
TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Many claims are paid for stock loaded by one railroad for a connecting line and delayed at the junction because of a lack of close train connections with the second line. The length of time the stock stands in the cars or the necessity of unloading and reloading it forms a basis for many claims, a large part of which might be avoided if the loading line would ascertain from the connecting road in advance when it could receive the stock to best advantage and then handle it to eliminate this delay at the point of connection. If this method was pursued by all roads it would reduce claims of this nature to a large extent.

In most cases when a line has received a shipment of stock for a connecting road the stock is loaded to suit the convenience of the loading line and the connecting road is only advised of the time that it will be delivered to it. The loading line feels relieved of its responsibility after delivering the car to the connecting line to handle as best it can. As nearly all claims are settled on a mileage basis the loading line has to participate in these losses and, therefore, suffers with the connecting line for these delays. If a good connection is made at the junction point and the stock is handled in a reasonable manner with an absolute record kept of its movement and connections, the chances for the successful prosecution of claims of this kind are greatly reduced.

J. L. COSS.

Despatcher, Chicago, Rock Island & Pacific.



Train of 82 cars weighing 2,680 tons, westbound in Silver Bow Canyon

St. Paul to Electrify Over Cascade Mountains

New Electric Zone Will Extend West from Othello, Wash., to the Coast and Will Cover 250 Miles of Track.

ON Thursday, January 25, the board of directors of the Chicago, Milwaukee & St. Paul, voted to extend its electrified zone from Othello, Wash., west to the Pacific coast. The new electrification involves about 250 miles of main line and will cost approximately \$6,250,000, exclusive of locomotives, but including bonding, catenary, transmission lines and sub-stations. Contracts for the material and equipment required will be placed in the near future and work will be started as soon as possible. It is expected that the extension will be in operation some time during the year 1918.

By referring to the map it will be seen that the eastern terminus of the new electric zone will be about 225 miles west of Avery, Idaho, the western terminus of the section of line now under electric operation. This means that the district or section of line between Avery and west to Othello, will continue to be steam operated. When the present plans are completed the St. Paul will be electrically operated from Harlowton, Mont., to Avery, Idaho; and from Othello, Wash., to Seattle and Tacoma, Wash., a total of approximately 690 miles, which is a distance practically equal to that from New York to Cleveland, Ohio.

It is not considered economical at this time to electrify the section between Avery and Othello, as between these two points the St. Paul traverses rather level country characterized by easy grades and few curves. West of Othello, however, are the grades encountered in the Columbia river valley and the extremely mountainous district over the Cascade mountains between the Columbia river and Seattle, including the 12,000 ft. tunnel at Snoqualmie Pass. A reference to the profile of the St. Paul line between Othello and Seattle will show that there is 37 miles of 0.4 per cent ruling grade between Othello and Beverly on the Columbia river and about 20 miles of 2 per cent ruling grade from there west to a point several miles east of the cascade tunnel between Keechelus

and Rockdale. West of the tunnel the line descends for 19 miles on a 1.7 per cent ruling grade to Cedar Falls and between Cedar Falls and Seattle, a distance of 40 miles, the ruling grade is 0.8 per cent. Due to the mountainous country traversed by this section of the St. Paul, the curvature is necessarily heavy and in this respect closely resembles the character of the line between Harlowton, Mont., and Avery, Idaho.

The traffic consists of three passenger trains and an average of from four to six tonnage freight trains each way daily. The direction of heavy tonnage is eastbound. One Mallet locomotive now brings 2,100 tons eastbound to Cedar Falls, where a Mallet helper is put on for the 1.7 per cent grade to the tunnel at Rockdale. Under the proposed electrical operation, one electric locomotive will bring about 3,000 tons to Cedar Falls, and an electrical pusher will be used for the steep grade from there to the tunnel. Besides the increase in tonnage, the speed on the heavy grade section, now very low under steam operation, should be about doubled.

SYSTEM TO BE USED

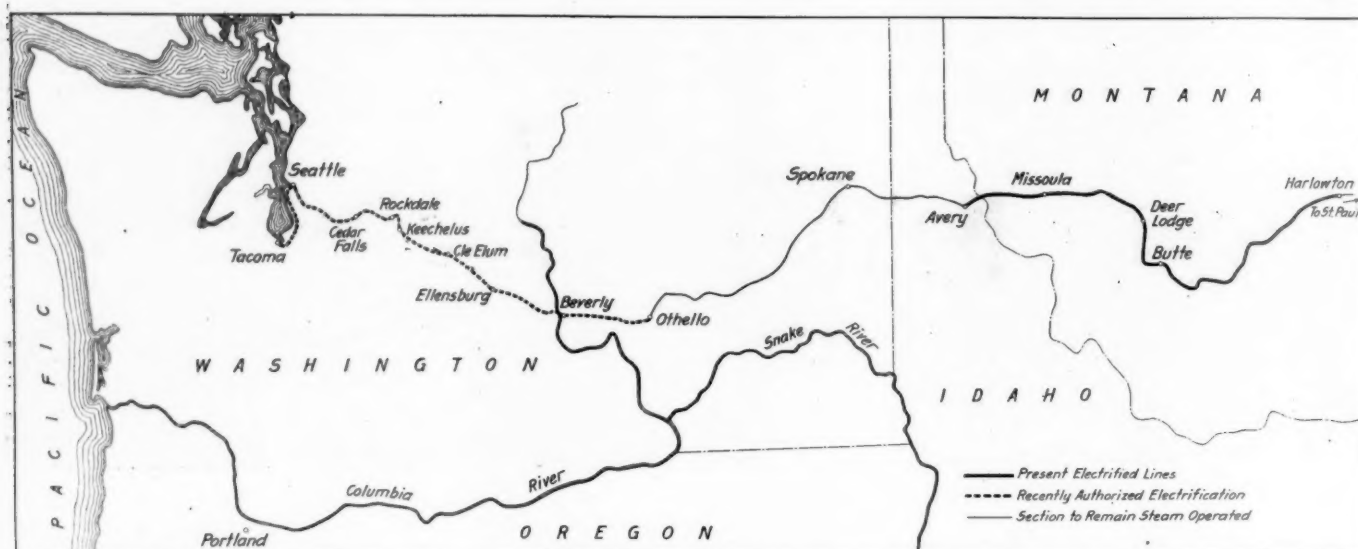
The same system of electrification will be used on the new extension as has been used and found so successful on the original section electrified. The electric locomotives which will be purchased to operate over the new electrified zone, will be identical with those in service on the Montana electrification. The same double-trolley, wooden pole, catenary construction and the same type of transmission line and system of feeders will be used, as the several months' trial of present installation has indicated that no changes in these details are necessary or advisable. Briefly, the system of operation will be 3,000 volts direct current at the trolley, energy at this potential being furnished from sub-stations containing motor generator sets and transformers supplied from transmission lines of various hydro-electric companies;

supplemented by a 100,000 volt line paralleling the track and owned by the railroad company.

The electric locomotives will each be constructed of two units permanently coupled together, the halves being duplicates, but each half capable of independent operation. The locomotives weigh 282 tons, have a running tractive force of 85,000 lb. and a starting tractive force of 126,000 lb. The passenger locomotives have a gear ratio permitting the oper-

manner in which the locomotives are running, and with the ease and speed with which they handle the heavy trains over the grades and curves encountered on the mountain divisions. It is a literal fact that the present electrification has eliminated the Rocky mountains as far as railroad operation is concerned on the St. Paul.

On the Rocky mountain electrified division the schedule for both freight trains have been reduced by about 30 per cent and

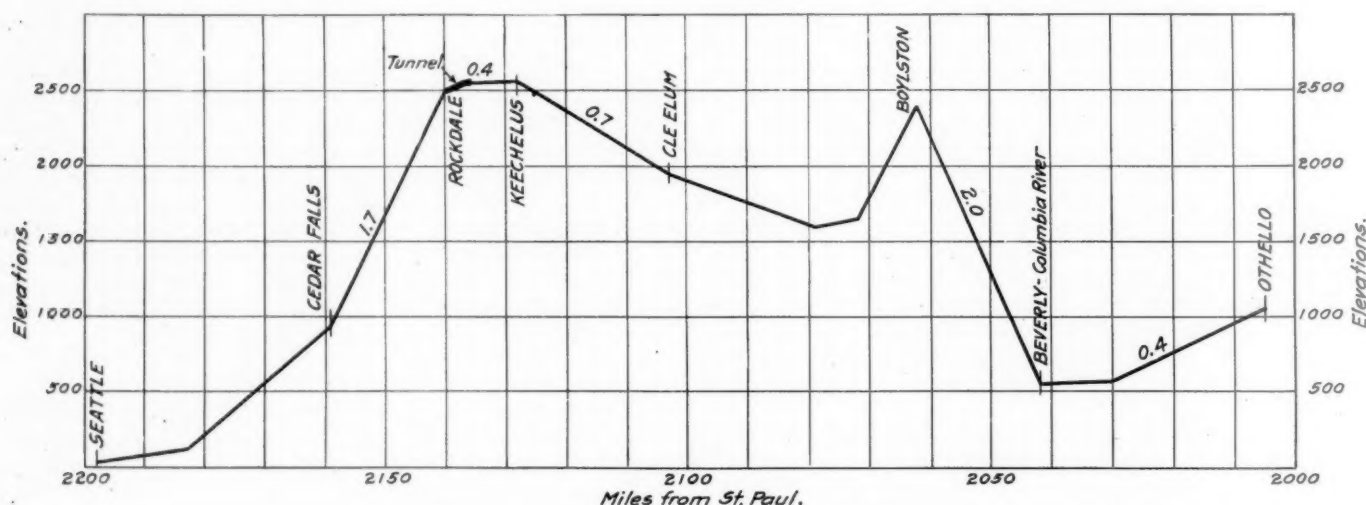


Map of the St. Paul Lines West of Harlowton, Mont., Showing the Present and Recently Authorized Electrifications

ation of 800-ton trains at a speed of approximately 60 miles an hour on tangent level track. The average passenger train on the St. Paul weighs from 650 to 700 tons and is hauled over the two per cent grades of the present electrified divisions without a helper. The freight locomotives are designed to haul 2,500 tons up a one per cent grade at 16 miles an hour and on the Rocky Mountain electrification two of them have been used successfully to haul 3,500 tons on a two per cent grade. In many cases it was found necessary to increase the

operation under the reduced schedules has proven most reliable; in fact, the electric locomotives are now counted on to make up the time lost on adjacent steam operated divisions. The increased reliability obtained by the use of the electric locomotive is one of the chief advantages of electric operation. The electric locomotives keep going with a full tonnage train under all conditions of weather and over all kinds of road.

When trains are hauled by electric locomotives it is found that their movement is so uniform and that failures of the



Approximate Profile of the New St. Paul Electrification

length of the passing siding so that the maximum hauling capacity of the locomotive could be utilized.

The decision to use, on the extension, the same system and the same type of equipment which is now being used, speaks well for the success of 3,000-volt direct current operation for heavy main line service. C. A. Goodnow, assistant to the president, in charge of electrification on the St. Paul, states that he is particularly impressed with the satisfactory

electrical equipment are so rare that one set of train dispatchers can easily handle trains on the section now under electrical operation where two sets were required under steam operation. Under electrical operation the time between Three Forks and Deer Lodge has been reduced from 12 to 8 hours for heavy freight trains and in addition the tonnage has been increased on the maximum grades from 1,700 to about 3,000 tons. This tonnage is now handled at the speed of about 16

miles an hour on the heaviest grades, whereas the best that the steam engine could do with the lighter trains was about 8 miles an hour. The electric locomotives, which will be used on the new section, often cover 250 miles a day on the Rocky mountain division and are standing up under this hard service extremely well. Mr. Goodnow, when talking about this feature of electrical operation, said that present indications tended to show that the maintenance cost of the electric locomotive will be remarkably low.

The locomotives used between Othello and Seattle will naturally be equipped for regenerative braking, as this feature of the locomotives now in use has given great satisfaction. Mr. Goodnow states that regeneration effects a saving



Freight Train Descending 2 Per Cent Grade

of approximately 14 per cent based on power used at the locomotive.

POWER SUPPLY

The general scheme for supplying electrical energy to the trains on the new electrification will be the same substantially as that adopted for the Montana installation. The power will be supplied by hydro-electric developments in Spokane, in the Cascade mountains and on the Pacific coast; all power will be purchased from private corporations. The contracts for furnishing such power will provide for about 40,000 kilowatts and each will contain an option covering whatever additional power may be necessary to take care of increased business. The cost of electric current will be approximately $\frac{1}{2}$ cent per kilowatt hour and there will probably be provisions similar to those in the contract made with the Montana Power Company, which provides that the power factor be limited to a variation of 20 per cent from unity and that the monthly load factor will be equivalent to 60 per cent, when based on the contract load.

One of greatest economies to be effected by the proposed electrification will be the saving in the cost of energy required to haul the trains. The railroad company's oil contracts have expired, and any new contract which it makes for oil will be based on a considerably higher price for this fuel. On the other hand, the contract which the railroad company entered into with the Montana Power Company for furnishing current for the Rocky mountain electrification runs for 99 years, during which time no changes in the cost of current can be made.

In connection with the advantages to be obtained by electrical operation it is interesting to note that neither of the electrification projects of the St. Paul have been made necessary because of nuisance caused by locomotive smoke, congestion at terminals or at tunnels, but both were brought about because of the economy that can be effected by the substi-

tution of electric for steam power. This economy will be particularly felt in both of the electrification districts because of the presence in each of cheap hydro-electric power, which fact has been an important factor in the decisions to electrify.

HISTORY OF THE ST. PAUL ELECTRIFICATION

Although the subject of electrification had been under consideration for some time it was not until November, 1914, that a contract was actually placed for equipment and material necessary to electrify the 113 mile division between Three Forks and Deer Lodge, Mont. This was simply the first step in a scheme which involved the extension of the electrified zone to cover 440 route miles between Harlowton, Mont., and Avery, Idaho, on the west; the whole foreshadowing the ultimate electrification of the main line to the Pacific coast. In view of the magnitude of the project, the progress which has been made is remarkable. By November, 1915, overhead construction had been completed for a distance of 200 miles and the 100,000-volt transmission line, which was erected by the railroad on its own right of way, had been completed for an equal distance and the lines from the Montana Power Company were ready for service. At that time the trackage actually ready for train operation included yards and sidings at Three Forks, Deer Lodge and Piedmont and passing tracks at other points. Seven of the sub-



Catenary Construction Over Tangent Track

stations designed to supply power for the first half of the 440 miles of route were completed and electrical equipment practically installed.

Work on the construction of the forty-two 282-ton locomotives was at that time progressing rapidly. The first complete locomotive was placed on a test track early in September, 1915. In November, 1915, it had been turned over to the railroad company and was being exhibited at various points on its route from Chicago to the electrified division of the St. Paul. On November 13, the St. Paul made a test of one of the new locomotives on the tracks of the Butte, Anaconda and Pacific, as power was not yet available on the St. Paul.

On December 9, the Chicago, Milwaukee & St. Paul trans-

continental "Olympian" was taken from Butte, Mont., to Piedmont by an electric locomotive, and on December 8 officers and directors of the road and officers of the General Electric Company made an inspection trip over the line in a fast train consisting of three special cars and one electric locomotive. The test consisted of operation at various speeds up to 70 miles an hour, with various tonnages. On December 9, two electric locomotives took a train of 48 loaded cars, 3,000 tons, from Butte up the two per cent grade to the summit of the Rocky mountains at a speed of 15 miles an hour and then continued down the descending grade on the opposite side. This was the inauguration of electric operation. It was not until January, 1916, however, that steam freight locomotives were entirely removed from the electrified division.

At about that time it was found that the electric locomotive could handle considerably more tonnage than the builders guaranteed, and it was also demonstrated by the various tests run during that period that the system of regenerative braking was entirely successful.

During the month of April, 1916, service was extended to Harlowton, Mont., making a total of 220 miles of electrically operated road. On November 1, the St. Paul put in operation the third electrified district, the line from Deer Lodge, Mont., to Alberton, a distance of 110 miles. This made the total length of line electrified, Harlowton to Alberton, a distance of 336 miles. On December 11, 1916, 76 miles were added to the electrified section which completed the electrification from Harlowton, Mont., to East Portal at the east end of the St. Paul Pass tunnel, making a total distance under electrical operation of 406 miles. During this month (January), the finishing touches are being put on the last 25-mile stretch of electrified district, and it is expected that the entire mountain division of 440 miles will be electrically operated by February 1.

WASHINGTON CORRESPONDENCE

WASHINGTON, D. C., January 30, 1917.

STRIKE PREVENTION PLAN ENCOUNTERS OBSTACLES

President Wilson's program for legislation to supplement the Adamson "eight-hour" law by making strikes illegal pending an investigation has encountered so much opposition in Congress that administration leaders are trying to work out a compromise, and although the President seems to be making every effort to have his recommendation carried out and is said to be still confident of success, the chances for the enactment of an effective law seem rather doubtful.

The effectiveness of the opposition of members of Congress who are unwilling to impose any restraint on the labor organizations is increased by the congestion of the congressional program. Caucuses and meetings of the Democratic steering committees have been unable to agree on a plan for expedition and the Senate and House committees in charge of the proposed labor bills are having some stormy sessions among themselves. The Senate Committee on Interstate Commerce last week voted 10 to 5 against the provision for compulsory investigation, which is so obnoxious to the railroad brotherhoods and although it was announced that a bill would be reported the latter part of the week to provide for an investigating commission, the committee later decided to give the matter further consideration. The brotherhood leaders have been in conference with the President to advocate their plan for a commission to be composed of four members selected from the brotherhoods and four railway officers, but without power to make an effective order. This plan was submitted to the President in writing, after having been proposed before the House committee, but both the President and the committee have rejected the idea of a commission which would not recognize the public interests and Chairman Adamson is now understood to be preparing a new bill which will incorporate this feature.

Unless the Supreme Court hands down its decision on the constitutionality of the Adamson eight-hour law next Monday, February 5, there will be no decision until after Congress adjourns, because the court has announced a recess for four weeks from February 5 to March 5 to prepare opinions. Next Monday will be less than one month since the case was argued before the court and a decision in so short a time would be almost unprecedented. The next regular opinion day will be March 6, two days after the adjournment of Congress.

RAILROADS AND BROTHERHOODS TO FRAME CLEARANCE BILL

Representatives of the railroads and of the brotherhoods of train service employees are to work together in an effort to reach an agreement on a draft of a bill to regulate clearances between structures and equipment, to be submitted to the Senate Committee on Interstate Commerce. This was arranged at a hearing before the committee on January 26 on a bill, S. 6550, introduced by Senator Thompson, which was intended to put into effect amendments proposed by the House committee to the Decker bill last summer for the purpose of meeting the wishes of the brotherhoods while eliminating the points to which most serious objection was made by the railroads. At the hearing before the Senate committee it developed that the Thompson bill was more drastic in its provisions than was supposed to have been contemplated and went far beyond the requirements asked by the brotherhoods.

G. W. Kittredge, chief engineer of the New York Central, made a lengthy statement to the committee, which he illustrated with a large number of diagrams to show what extensive changes would have to be made in existing trackage and structures to comply with the provisions of the bill, many of which, he said, would not in any way promote safety, but in some instances would increase the liability to accidents. Under its provisions, he said, the Pennsylvania and New York Central could not continue the operation of their electrified terminals unless exceptions were permitted by the Interstate Commerce Commission.

W. W. Atterbury, vice-president of the Pennsylvania Railroad, filed with the committee a detailed estimate showing that it would cost the Pennsylvania over \$61,000,000 to comply with the provisions of the bill on the lines east of Pittsburgh, although in 1914 only 11 train employees on these lines had been killed in accidents due to obstructions and this number had been reduced to nine in 1915 and to seven in 1916 and conditions were being greatly improved as a result of the work of safety committees. With the same expenditure of money, Mr. Atterbury said, he could enclose the entire property with a fence that would keep out trespassers and prevent accidents to trespassers which had resulted in the death of 228 persons in 1915, or he could eliminate dangerous grade crossings which had resulted in 80 deaths in 1915. He pointed out that such expenditures as would be required by a clearance law could not be capitalized and that most roads have not sufficient surplus earnings to take care of the expense. He said there was no objection to establishing a standard for new construction, but that changes in the existing structures should be made a gradual process.

H. E. Wills, legislative representative of the Brotherhood of Locomotive Engineers, and P. J. McNamara, vice-president of the Brotherhood of Locomotive Firemen and Engineers, said that they had no intention of asking for such radical changes as were contemplated by the bill and were not in accord with its provisions, although Senator Thompson had intended to draft it along the lines of their recommendations. They said they had no idea of asking radical changes in bridges, tunnels, etc., but that they wanted the elimination of minor obstructions which could be accomplished at comparatively little expense, and that if they could be given an opportunity to get together with the railroads an agreement could be reached that would be mutually satisfactory. This plan appealed to the members of the committee and it was assented to by the railroad officers. It was agreed that a meeting

should be held this week or next, as a result of which they would submit to the committee either a draft of a bill or a statement of the points of difference.

HOUSE COMMITTEE TO CONSIDER CAR SERVICE BILLS

The House Committee on Interstate and Foreign Commerce has announced a public hearing to be held on Thursday this week for the purpose of considering some of the bills that have been introduced in accordance with the Interstate Commerce Commission's recommendation in its annual report that it be given authority over the exchange, interchange and return of cars. Numerous bills to carry out the recommendations of the commission have been referred to the committee, but the commission itself in its report on the car supply investigation issued on January 21, has taken the position that it already has the power. It is understood that the railroads do not propose to take any action either to oppose or favor the passage of such legislation.

PENNSYLVANIA RAILROAD REFRIGERATOR CARS

With a view to utilizing every means available to provide a car which will furnish and maintain adequate refrigeration for milk and cream, the Pennsylvania Railroad has recently designed and built two refrigerator cars which, in

2. Adequate continuous insulation fully surrounding the inside lining. The amount of insulation under the roof, which is liable to be heated excessively by the direct rays of the sun, should be greater than that in the sides and bottom.

3. The outside sheathing and roof should be weathertight.

4. The vertical air space around the ice baskets and through the ice should be adequate.

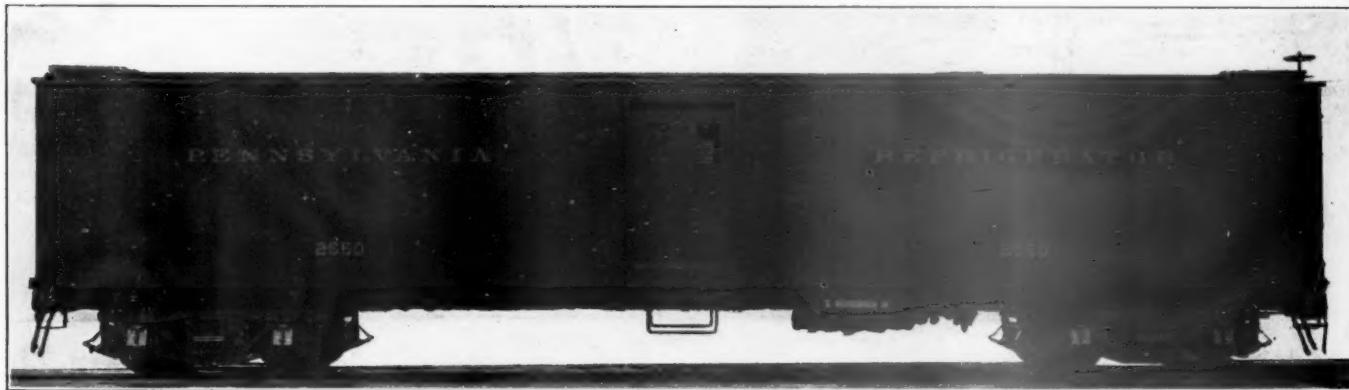
5. The bulkhead, in front of the ice chamber, should be solid, with an air inlet into the ice chamber, close to the ceiling, and an outlet into the car, close to the floor. The bulkhead should be made of non-conducting material, or should be insulated to promote dry refrigeration.

6. The floor should be smooth, to permit sliding the milk cans into place, and to provide a flat base for racks when the car is used for other shipments for which an air space under the lading is of advantage.

Two cars, differing from each other slightly, for experimental purposes, have just been completed and turned out of the Altoona Car Shops.

Car No. 2500, class R/50, is not partitioned, all of the space between ice baskets is in one compartment. The side doors are of the usual refrigerator type, and open outward.

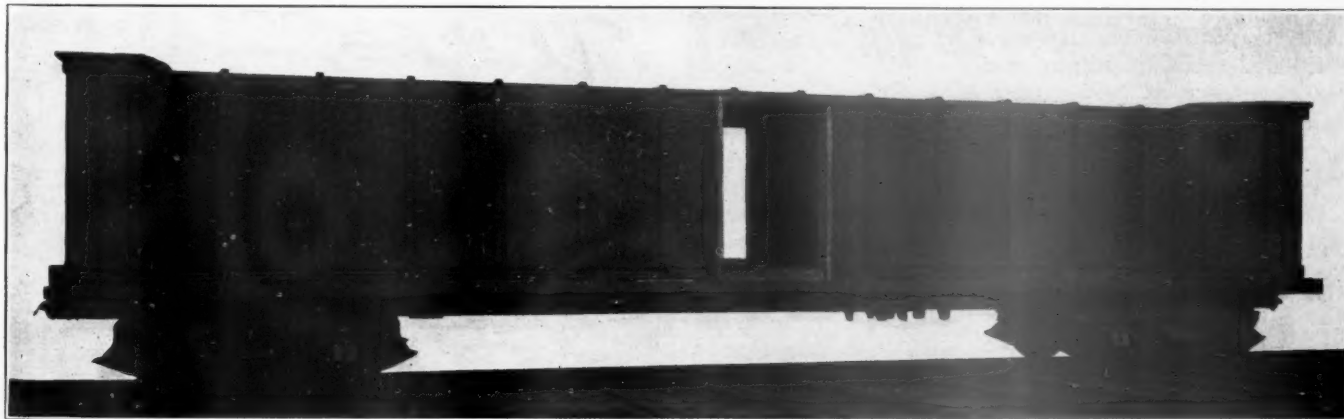
Car No. 2550, class R/50a, has the space between the ice baskets divided into three compartments, by means of two insulated wooden bulkheads. The middle compartment is 6 ft. 2½ in. long, and is used for quick loading and unloading



Refrigerator Car with Three Compartments for Rapid Loading

many respects, represent a distinct departure from past practices. The cars are designed to use ice either on top of the cans or in the bunkers and are also adapted to the shipment of other commodities than milk and cream.

of cans and boxes from and to station platforms. The cans and boxes can be transferred to or from the other two compartments, which contain the refrigerating means, while the train is in motion. In this car the side doors are of light



Inside Box on Underframe; Insulation Under Floor

Past experience and experiments made some years ago indicated the following basic requirements:

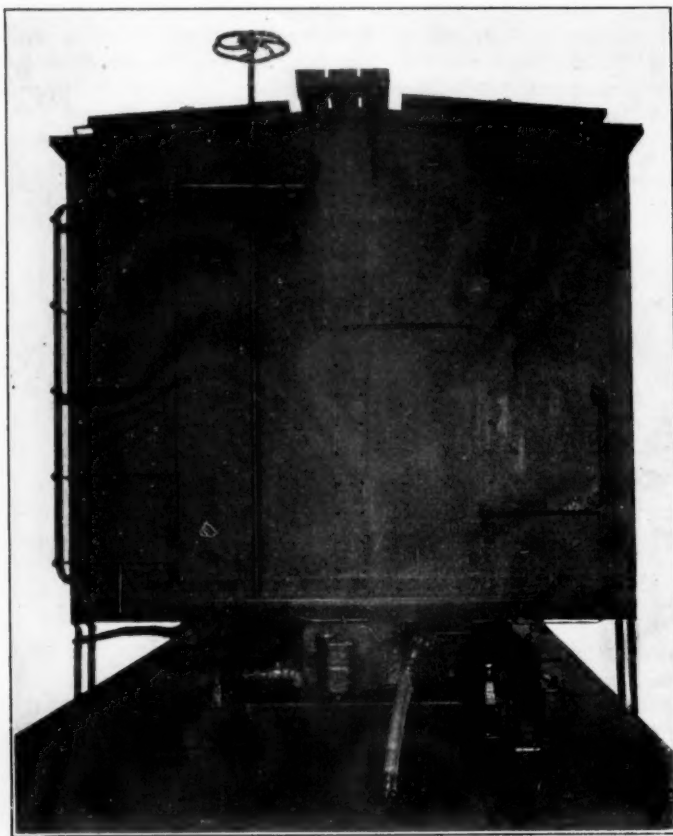
1. An inside lining that is watertight and keeps moisture away from the insulation.

construction, and the insulated refrigerator doors are in the two partitions. With the exception of the differences just mentioned, these two cars are exactly alike.

The trucks are of special construction. The side frames

are of cast steel. The side frame center opening, the spring plank, and the 5 ft. 6 in. wheelbase are the same as in freight trucks. The elliptic springs and bolster are the same as used on tenders; the bolster has no side motion. The ends of the frame are arranged for helical springs over the journal boxes and clasp brakes. The axles are of the passenger type, with 5½ in. x 11 in. journals, and the wheels are rolled steel, 33 in. in diameter. The journal boxes are pedestal type passenger car boxes. From this it will be seen that the truck represents a combination of passenger and freight truck features.

The underframe also combines passenger and freight principles. Bolsters have been omitted, and cantilevers to support the side bearings have been substituted. The load is carried on the end sills and crossbearers, whence it is transferred to the center plate through the center sills. The center sill construction is of the box type, consisting of two 15 in., 40-lb. channels, spaced 12¾ in. apart, and two ½-in. x 20-in. coverplates. The side sills are 3½ in. x 5 in. x ⅜ in. angles.



Hand-Brake End of Refrigerator Car

The spaces between the center sill coverplate and the side angles are covered with ⅛-in. steel plate, reinforced with U-shaped stiffeners, riveted on top. The back follower stop and front bumper castings are of the integral type used in freight cars. The center plates are drop-forged steel.

Oak blocks are placed on the end sills and crossbearers to support the steel box forming the inside lining. The spaces between these blocks are filled with insulation, consisting of four layers of ¾-in. Keystone hair felt, separated by wooden grids to form air spaces.

The inside lining consists of 3/16-in. floor plates, ⅛-in. side sheets and 3/32-in. ceiling sheets, all reinforced with U-shaped braces riveted to the outside. It forms a box which can be built up complete on the floor and then lifted to its proper location on the oak supports. The ¾-in. Keystone hair felt, of as great width as can conveniently be manufactured and cut to the proper length, is then lifted to the top

of the lining box and unrolled to drop down the sides to meet and join the insulation under the floor. A continuous blanket is thus formed all around the inside box. There are four such blankets running transversely, separated with wooden grids, made of ½-in. strips of soft wood. Two additional layers, separated with wood grids, are placed longitudinally on the top of the box, and four layers are placed at the car ends to correspond with the sides.

The Keystone hair felt referred to consists of ¾-in. hair felt placed between two sheets of 90-pound specification paper, and securely sewed together.

After the insulation has been applied, the sides, ends and



Side of Truck, Showing Spring Arrangement and Clasp Brakes

roof are attached. These parts are also reinforced with U-shaped braces, and are so designed that the riveting can all be done from the outside. This also permits removing a side, end or roof, for repairs, without disturbing any other part of the car. The connections between inside and outside steel shells are wood. The drains are made of indurated fibre. Hence there are no metal connections between the inside and outside steel shells.

The ice baskets are of the same construction as now standard on other Pennsylvania Railroad refrigerator cars, the



Truck Which Combines Passenger and Freight Features

bulkhead in front of each ice basket being made of two courses of wood with an air space between them.

The general dimensions follow:

Length over inside sills.....	52 ft. 5½ in.
Length between ice chamber bulkheads.....	42 ft. 8¼ in.
Width over sheathing.....	9 ft. 6¼ in.
Width over roof.....	10 ft. 0¾ in.
Width inside.....	8 ft. 5¾ in.
Height inside (average).....	6 ft. 9¼ in.
Weight of car, empty (lb.).....	78,000
Ice capacity of baskets (lb.).....	10,000
Loading capacity (lb.).....	50,000
Loading capacity (cu. ft.).....	2,450
Distance between centers of trucks.....	38 ft. 0 in.
Total wheelbase.....	43 ft. 6 in.

MANAGEMENT OF MILITARY TRAIN OPERATION IN ENGLAND.—Sir Sam Fay, General Manager of the Great Central Railway, is about to take over the control of military and munition train movements in this country in connection with the newly-created Department of Military Railways, of which Sir Eric Geddes is the head and Sir Guy Granet assistant director. The change will secure complete co-ordination of the railway military transport work at home and at the front. —*Railway Gazette, London.*

Further Views on Government Ownership in Canada

A Reply to Recent Articles in this Paper Regarding the Results of State Management of the Intercolonial

By J. L. Payne

Comptroller of Statistics, Department of Railways and Canals of Canada

SINCE I have the privilege of presenting certain facts in relation to the Intercolonial Railway to readers of the *Railway Age Gazette*, Samuel O. Dunn has not only made a somewhat lengthy reply, but has had the help of Francis A. Bonner in further treatment of the subject from the standpoint of an opponent to state ownership; and it seems to me that I have earned the right to at least a brief rejoinder to both of these gentlemen. If I remain silent there is apt to be some loss of force to the main points which I started out to make, and it also seems probable that one or two more or less important assumptions by my critics will be left unqualified.

In the first place, too much stress cannot be laid upon the fact that I did not enter this discussion, which I trust has served the useful purpose of throwing some light on a subject of first rate importance, as an advocate of government ownership. My attitude was meant to be strictly judicial. Perhaps that declaration will be strengthened by the further declaration that I have by no means reached a definite judgment as to the merits of the issue. My chief purpose was to show two things: That the experience of the Intercolonial could not properly be used as a test of the fundamental principle of state control of railways, and that the overwhelming reason why the government road in Canada has not earned a fair return on capital cost was to be found in its low passenger and freight rates. The facts and statistical data which were used in support of the case I attempted to make could not be made more forceful by mere reiteration. Mr. Dunn and Mr. Bonner have analyzed them as few others could do, and those who have read both sides must decide as to the relative weight of proof and argument. Certainly I cannot add anything of real value to my primary statement of the case for the Intercolonial.

What has impressed me perhaps as much as anything in this controversy, if I may so classify it, is the enormous power which two debaters, having the skill of Mr. Dunn and Mr. Bonner, may bring to bear upon a subject as to which the layman possesses an almost unavoidably meagre knowledge. Each has a command of technical information which places him in a position of great advantage. Given a mass of figures such as has been used in the comparison made between the operating results of the Intercolonial and the Canadian Pacific, and only a perfect case would prevent them from finding here and there some statistical fact upon which to hang an assertion, or which they could deftly use to bolster an argument.

Now, the case for government ownership is far from being perfect. It is equally true that the case for corporate control is full of flaws. If a man of clear judgment, who had never heard the arguments for either side, should come to America—let us say from canalized Mars—and be asked to decide between the disputants in the issue over state ownership of railways, he would be sadly puzzled. He would find a great deal to convince him that government ownership in Canada and other countries had failed. On the other hand, he would discover that private ownership had also, in scores of instances, failed. Whatever of weakness he found in one form of control he would most certainly find in the other. Then if he turned to the question of why either had fallen short of success, he might be quite unable to decide from any evidence available whether or not the failure had been due to defects inherent in the underlying principle, or in the

human agencies which had sought to give that principle effect.

IMPORTANCE OF THE HUMAN FACTOR

The human factor, I am convinced, rises high over everything else in the matter of railway administration. All else turns on conditions. One set of men will succeed where another set would fail. There are many roads which the most skillful administrators in the world could not make financially profitable to the owners. One of the weak spots in the conduct of state railways, as Mr. Dunn aptly indicates, is that the management seldom has an entirely free hand. This is counterbalanced in the case of corporate lines by the losses arising from the misuse of power, the forming of combinations, the pursuit of personal gain and in various forms of graft. If Mr. Dunn and Mr. Bonner are right in assuming that deficits on the Intercolonial have been due to mismanagement rather than to low rates, and that such mismanagement is attributable to the defects inseparable from government ownership, then I am surely not illogical in demanding that they shall show mismanagement does not occur, and that adequate net earnings are invariably created, under private ownership. There are over two thousand corporate railways in the United States, and less than one-tenth that number in Canada. How many of them have ever earned a dividend? Less than ten per cent.

This brings me, in pursuing my judicial role, to ask if Mr. Dunn in particular—and Mr. Bonner in lesser degree—is not on dangerous ground in making the earning of fat dividends a test of successful railway administration? If I am not mistaken, it is that very form of success which has created the demand for expropriation by the state. High profits are quite naturally regarded as the direct product of excessive transportation charges. Under government ownership the sole object is to provide service at cost. In this regard I do not for one moment mean to contend that the low rates of the Intercolonial are defensible; but surely insufficient rates on a state railway, implemented by taxation on the whole people, are preferable to high rates and an unnecessary surplus. Why the Intercolonial rates fail to provide for fixed charges I have tried to show, and any line of argument or deduction which disregards the purely political purpose of the government railway in Canada falls short of recognizing the absolutely unique life history of the road. That is why I insist the Intercolonial cannot fairly be accepted as a demonstration of either the failure or success of state control.

CHARACTER OF THE TRAFFIC IN EASTERN CANADA

Mr. Bonner attacks the very vitals of my reply to Mr. Dunn. It was my object to show that the Intercolonial would be a relatively more prosperous road than the Canadian Pacific if it had the passenger and freight rates of the latter. That object I sought to accomplish by taking the average receipts per ton per mile as standards for the measurement of operating results. Mr. Bonner grapples bravely with this argument, and asserts that these averages are not necessarily a test of comparative earning power. He fortifies this assumption by endeavoring to show the freight tariffs of the two roads are practically identical, and that the difference in the average of each is due wholly to the proportions of high grade and low grade commodities hauled. I want to admit, with unqualified frankness, that if Mr. Bonner has estab-

lished by clear proofs his contention in this regard he has pretty well disposed of my defence of the Intercolonial. But I fear he has not.

Right here a very important explanation must be made. Mr. Bonner, in claiming that the Canadian Pacific and Intercolonial have corresponding freight tariffs, refers to a fact which leaves my original statement quite unimpaired. The adoption by the Intercolonial of its present tariff did not take place until nearly two years ago. It is quite obvious that Mr. Bonner did not know this change had been made. He, no doubt, assumed the tariff of 1916 had been in force for many years. My comparisons were all based on the rates which were in effect in 1913 and preceding years, and it was entirely fair to do so. The indictment against the government road in Canada is almost wholly founded on its long record of deficits and occasional small balances of net earnings. As a matter of fact, when I wrote my reply to Mr. Dunn I did not know what had been the effect of the new tariff on operating results; but, without giving exact figures in advance of my forthcoming official report, I may say that it has been the means of producing a substantial return on capital investment for the first time in the history of the system. This has been done under the same management which directed the affairs of the road in 1913, and I am therefore justified in alluding to it as vindicating in large measure my basic position in the premises. It is, nevertheless, well worth while, for purposes of emphasis and helpful elucidation, to return to the basis of my primary arguments—the year 1913.

It would require the most painstaking analysis of freight movement by the Canadian Pacific and the Intercolonial in 1913 to make an accurate comparison of earnings from traffic on the basis of tariff rates applied to either classes or specific commodities. Such an analysis is quite impracticable within the compass of space available to me. It is perhaps unnecessary. All freight traffic may be divided into two, rather than the seven official, classes—one bearing a low rate and the other a high rate. The low rate commodity classes are products of agriculture, products of the mine, products of the forest and animals and their produce. The high rate classes are manufactures, merchandise and miscellaneous. The tariff charges are not uniform within classes; but, speaking broadly, this division is sound as to low and high grade commodities. In 1913—which was the normal year before the war, selected by me for purposes of comparison—the Canadian Pacific hauled 29,471,814 tons of freight, and the Intercolonial 5,316,461 tons. Of this volume of traffic the Canadian Pacific had 20,957,909 tons within the low grade division, and the Intercolonial had 3,800,640. This was equal to 71.1 per cent. in the case of the Canadian Pacific, and 71.5 per cent. in the case of the Intercolonial.

Thus the two roads were on practically the same footing as to the nature of their traffic. Each had the same proportion of low grade and high grade freight. Now, Mr. Bonner might not be disposed to accept this broad division of traffic as I have made it, although I assure him all operating officers

	Intercolonial Per cent	Canadian Pacific Per cent
Products of agriculture.....	11.2	22.7
Animals and their produce.....	2.6	2.9
Products of the mine.....	32.9	29.7
Products of the forest.....	24.8	15.8
Total	71.5	71.1

will be on my side. The four low grade commodity classes do not carry a common freight rate. Products of agriculture, for example, have a higher rating than animals and their produce; while products of the forest and products of the mine rank still lower. Then again, there are special commodity rates within classes, applicable almost wholly to long haul movement. In that category are lumber, coal and grain, the descending scale being in the order named. On this basis

let us see what there is in Mr. Bonner's contention regarding the effect on the Intercolonial ton mile average by an alleged preponderance of low grade freight. Let the accompanying table suffice for the primary test.

On its face the foregoing statement is favorable to the Canadian Pacific, since these classes are in the order of earning power. That is to say, on the basis of proportions the Canadian Pacific would earn more money than would the Intercolonial. But it is quite adverse to Mr. Bonner's argument regarding the cause of a low ton mile average on the Intercolonial. Grain pays the lowest special rate of any commodity, and precisely two-thirds of the 22.7 per cent. of Canadian Pacific freight business under the head of products of agriculture was of that separate class. The direct effect would be to reduce the ton mile average of that road very materially, as Mr. Bonner incidentally admits. The same thing is true of lumber and coal, the next two low grade commodities having special long haul rates. The Canadian Pacific moved 3,932,111 tons of coal to 1,326,441 by the Intercolonial, and 4,651,554 tons of lumber to 1,296,619 tons by the Government road. Thus the most important dilutants really served to cut down the Canadian Pacific ton mile average; yet it stood in 1913 at .784, as compared with .570 for the Intercolonial. No matter how the figures are juggled, nor what qualifications are interposed, those averages represent the comparative earning power of the two roads on freight. The same thing applies to passenger receipts. Mr. Bonner's comparison of ton mile and passenger mile averages, as I have said, relate to the year 1916, after Intercolonial rates had been brought up to practically the Canadian Pacific standard.

EASTERN AND WESTERN FREIGHT RATES

I now propose to call in a witness whose right to settle the argument will not be impeached—certainly not by either Mr. Dunn or Mr. Bonner. I allude to the Canadian Pacific. Three or four years ago the so-called "Western Rates Case" was heard by the Canadian Railway Commission, which is a board analagous to the Interstate Commerce Commission. It was by all odds the most important and most exhaustive trial which has taken place before that tribunal. At that prolonged hearing the Canadian Pacific, in defence of its Western rates, laid very special stress on the fact that it lost money on its Atlantic division. That is the division in which it competes with the Intercolonial, at what Mr. Bonner declares to be identical freight and passenger rates. If the Canadian Pacific, with its alleged superior management, plus the advantage of a much shorter haul between eastern termini—which are also the main termini of the Intercolonial—operated at a deficit, it seems to me that such a fact goes a long way toward sustaining my fundamental attitude respecting the Government railway. I will not say it is conclusive, since the allegation of mismanagement might still be well founded. I certainly was for many years in a position to form a sound judgment as to the management of the Intercolonial, and I sincerely believe that both Mr. Dunn and Mr. Bonner have been misled in that regard, notwithstanding all that can be truthfully said about political interference. The point I desire to impress is, that the Canadian Pacific earns its substantial dividends on freight rates, chiefly applicable to its western and central divisions, which are higher than those charged by the Intercolonial in the east up to 1916, and are also higher than those which it receives on its Atlantic division.

Mr. Dunn has taken unsafe ground, I think, in one or two instances, and this I say hesitatingly in the face of his splendid analysis of conditions on the Canadian Government railway system. He assumes, for example, that the higher capital cost of the Intercolonial, as compared with the cost of the Canadian Pacific, was caused by the control in one case being in the hands of the Government and in the other in the hands of a private corporation. Is that sound? Not neces-

sarily. The Intercolonial was built in eastern Canada, through a difficult and rocky country for the most part, while the Canadian Pacific was built in western Canada, most of it over the prairie. Be that as it may, must not the question of whether or not any particular road cost too much be finally determined by actual engineering conditions? If that be so, then I venture the suggestion that a mere comparison of mileage cost means little or nothing. In the same sense when Mr. Dunn points to the heavier train loads hauled by the Canadian Pacific, I reply that an adverse controlling grade may account wholly for the poorer showing of the Intercolonial.

I refrain from taking issue with Mr. Dunn or Mr. Bonner on the question of Intercolonial management. It is quite conceivable, however, that a road which failed to earn a dollar of profit in any particular year might have been administered with as much sagacity and business skill as another road which earned a substantial dividend. To make out a perfect case against Government ownership, as exemplified by the experience of the Intercolonial, I would respectfully suggest that two things must be proven: First, that mismanagement is an inherent consequence of State control, and second, that it is invariably absent from private control.

In conclusion, I must again be permitted to express my pleasure and satisfaction in debating a topic of this nature with gentlemen who have displayed such fine courtesy, and who have in all their observations kept on a high plane.

AUTOMATIC SPRINKLERS FOR FREIGHT HOUSES

The Pennsylvania Railroad has provided a complete system of automatic sprinklers for fire protection in its new Duquesne freight house at Pittsburgh and has followed this installation with similar equipment in its freight houses at Philadelphia and Harrisburg, Pa. The freight house at Pittsburgh is located on Duquesne Way, between Third avenue and the Point bridge. It consists of four buildings each 48 ft. wide, 220 ft. long and four stories high with basement. These buildings are placed end for end, thus virtually forming a continuous structure 880 ft. long, divided by three transverse fire walls. In addition there is a one-story structure 27 ft. wide along Duquesne Way for a length of 500 ft.

The building has brick walls with concrete floors and roof supported by concrete-covered steel beams and girders. In

matic valves having a fusible link or member. When the temperature of the air surrounding the sprinkler reaches a certain predetermined point because of a fire the fusible link separates and releases the water, which is thrown in a heavy rain-drop effect upon the fire area, drenching and extinguishing the fire immediately.

The typical sprinkler arrangement provides for the two sprinkler pipe lines running transversely across each transverse bay of the building with a sprinkler head under each alternate beam on each pipe line. This gives a total of 145 to 152 sprinkler heads on each floor of each building except that on the top floor, where additional sprinkler heads are installed at the top of the stair and elevator shafts, the number is increased to about 185.

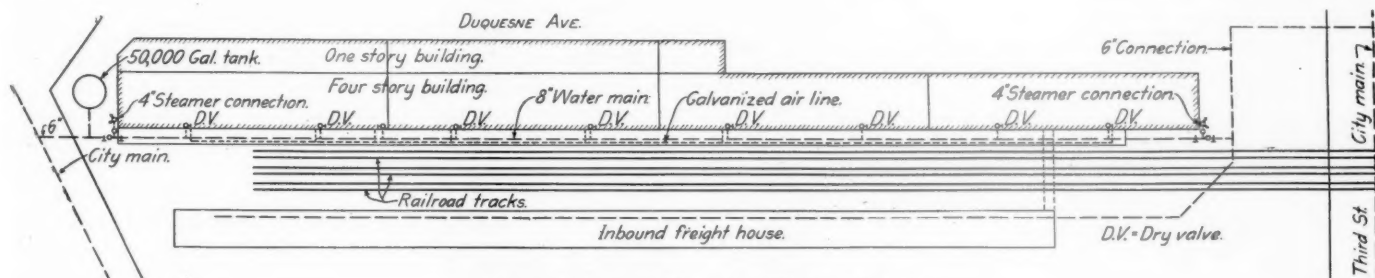
The water for the sprinkler system is provided by an 8-in. main running lengthwise of the building under ground di-



Typical Sprinkler Layout on the Top Floor

rectly under the platform on the track side of the building. The primary supply for this main is obtained by 6-in. connections at each end to city water mains in the adjacent streets. The secondary source of supply is a 50,000-gal. steel tank on the 95-ft. tower shown in one of the photographs. As a third source, steamer connections to which the pumping engines of the local fire department attach their hose lines have been provided in the water main at each end of the building.

Railway freight houses are almost invariably unheated



General Layout Showing Water Mains.

general, the framing of the building consists of a row of columns about 18 ft. 6 in. center to center, lengthwise of the building, dividing it into two longitudinal bays 20 ft. and 26 ft. wide respectively. Girders span transversely from the columns to the walls and beams, spaced 4 ft. center to center, span longitudinally from girder to girder. In the roof the beam spacing is 6 ft. instead of 4 ft.

DESIGN AND ARRANGEMENT OF SPRINKLERS

There are over 3,200 sprinkler heads in the building, each sprinkler being arranged to cover approximately 70 or 80 sq. ft. of ceiling and floor area. The sprinklers are simple auto-

buildings and it is, therefore, necessary to use the so-called dry pipe system, because any system which implies the use of pipes containing water at all times is inapplicable on account of the danger of freezing. However, a dry pipe system of the type installed in the Duquesne freight house is entirely reliable and acceptable to the underwriters.

In the dry pipe system, water is excluded from the piping throughout the building by an ingenious mechanism known as a dry valve, located on the supply pipe in the basement where it is free from danger of freezing. The dry pipe valve used is a mechanically-operated check valve, in which the air pressure acting on one set of discs or clappers transmits suf-

ficient power through a series of levers to hold shut another disc or clapper against the force of the water pressure.

The distributing pipes between the dry valve and the sprinkler heads contain air at a pressure of 25 to 40 lb. per sq. in. The opening of one or more of the sprinkler heads in consequence of a fire releases this compressed air, as a result of which the dry valve is opened and water is admitted to the distribution system. As an element of time is involved in the release of the air and the flow of water through the empty pipes it is the practice to limit the number of sprinkler heads served by a single dry valve to about 350. Accordingly in the Duquesne freight house there are two dry valves for each building, each serving an independent riser pipe, which is connected to one-half of the sprinklers on each floor. The air pressure in the distribution system is maintained by a small air pump.

AUTOMATIC ALARM SYSTEM

The automatic sprinkler system, as here installed, contains an electric alarm system connected to the dry pipe valves and to electric bells located at convenient points about the buildings so arranged that upon the opening of a single automatic sprinkler the bells will ring and notify those about the building of the presence of a fire.

As the water tank is exposed to the weather, it is protected against freezing by provision for the continual circulation of the water through a heater. Cold water taken from the riser pipe at a convenient point passes through a heater where it is heated by steam and is then conducted to the tank. This arrangement sets up the circulation and is said to be much more economical of operation than the blowing of steam directly into the water of the tank.

The sprinkler heads are tested in the factory under the supervision of the insurance laboratory representatives to 500 lb. water pressure, under which they must not show any signs of leakage and the completed systems as installed are tested to 150 lb. pressure, unless the static pressure exceeds 100 lb., in which case the test pressure is made 50 lb. greater than the static. The sprinklers in the Duquesne freight house, as well as those in the Philadelphia and Harrisburg freight stations, were installed by the Globe Automatic Sprinkler Co., Philadelphia.

INSURANCE SAVING EFFECTED

The economy of an installation of automatic sprinklers can ordinarily be demonstrated by the resulting reduction in the insurance rates. Where railroads carry their own insurance it is possible to judge of the reduction in risk only by studying the reduction in insurance rates secured through the installation of automatic sprinklers in commercial buildings of similar construction where the contents are of approximately the same character. For example, in a warehouse of mill construction the rate was reduced from \$2.50 to \$0.55 on the building and from \$2.91 to \$0.80 on the contents. On a concrete warehouse the reduction in the rate on the building was from \$0.25 to \$0.15 and on the contents from \$0.75 to \$0.25. The exact reduction in rate will depend upon the character of the risk, its exposures and water supply facilities.

COST OF MACHINE TOOLS.—In the year ended June 30, 1914, the railways spent over \$50,000,000 in wages to machinists alone, and less than \$12,000,000 for shop machinery and tools. A saving of 1 per cent in machinists' labor, which could be easily accomplished by more efficient tools, would amount to \$500,000. Figuring interest and depreciation on machine tools at 15 per cent, this \$500,000 would take care of an investment of something over \$3,000,000. There is no question but what a great deal more than 1 per cent could be saved in machinists' wages with such an expenditure for better and more efficient machine tools.—*Railway Mechanical Engineer.*

PROPOSED LEGISLATION AFFECTING RAILWAYS

The following bills affecting railways have been introduced in Congress:

H. R. 20256. By Mr. Adamson, January 18. To Committee on Interstate and Foreign Commerce. To amend Section 1 of the act to regulate commerce by inserting in the second paragraph the words "and the term 'car service' as used in this act shall include the exchange, interchange and return of cars used in the transportation of property by any carrier, subject to the provisions of this act."

H. R. 20352. By Mr. Esch, January 22. To Committee on Interstate and Foreign Commerce. To increase the power of the Interstate Commerce Commission with respect to the interchange of cars.

H. R. 20358. By Mr. Oliver, January 22. To Committee on Interstate and Foreign Commerce. To increase the power of the Interstate Commerce Commission with respect to the interchange of cars.

The Senate Committee on Interstate Commerce will hold a hearing on January 26 to enable George W. Kittredge, chief engineer of the New York Central, to present a statement outlining objections to the clearance bill, S. 6550, and to explain some maps prepared by him on the subject.

Charles J. Faulkner, representing the carriers, has filed with each member of the Senate Committee on Interstate Commerce a statement of objections to H. R. 7361 to amend the bill of lading law passed at the last session of Congress.

Representative Carlin has introduced a bill, H. R. 20450, which has been referred to the Committee on Judiciary, to amend section 10 of the Clayton anti-trust law to provide that it shall not apply in cases where no competition is possible by reason of the fact that the article of the special type or character desired can be had only of a single maker or seller at the point required. The bill also makes more flexible several of the provisions of the bill requiring railroads to secure competitive bids on purchases.

Representative Borland has introduced a bill, H. R. 20499, which has been referred to the Committee on Interstate and Foreign Commerce, to provide a standard time for the United States and to advance the clock one hour from the last Sunday in April to the last Sunday in September. The bill provides for the establishment of a zone system of time, the limits of each zone to be defined by order of the Interstate Commerce Commission, having regard for the convenience of commerce and existing junction points and division points of the railroads.

The revenue bill, H. R. 20573, introduced by Representative Kitchin on January 21, includes the proposed provision for an excess profits tax of 8 per cent of the amount by which the net income of corporations and partnerships exceeds the sum of \$5,000 and 8 per cent of the actual capital invested. This is to be in addition to the taxes under existing laws. For the purpose of the act actual capital invested means actual cash paid in, the actual cash value at the time of payment, all assets other than cash paid in and paid in or earned surplus and undivided profits used or employed in the business, but does not include money or other property borrowed. The bill was reported favorably by the House Committee on Ways and Means on January 29.

Representative Sims introduced a bill H. R. 20630 to authorize the President to take possession of and operate railroads in the event of a strike or threatened strike. This bill was referred to the Committee on Interstate and Foreign Commerce.

SOUTH AFRICAN RAILWAY MEN WITH THE COLORS.—Over 4,000 employees of the South African Railways are either with the forces in Europe, or in East Africa, and recently 300 specially selected men were sent to France to undertake railway work there.

New Lackawanna Coal Dock at Buffalo

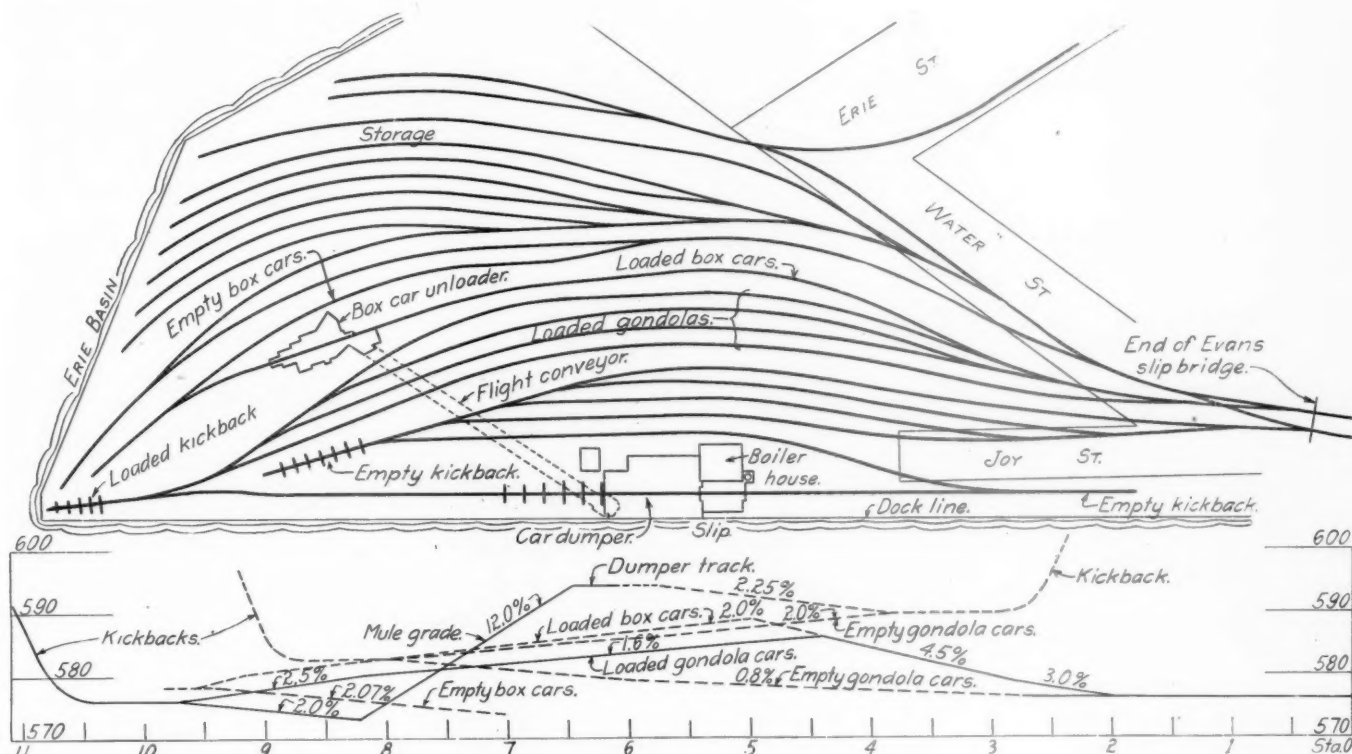
Intensive Use of a Limited Ground Area to Secure the Desired Facilities—A New Box Car Unloader Installed

ON October 1, the Delaware, Lackawanna & Western placed in service a modern coal handling plant at Buffalo, N. Y., which replaced an old timber trestle that had been in use since 1882. The old structure was located on the Buffalo river near its mouth and along the entrance from the outer harbor to the inner. The old trestle was built on the harbor line, and while the location was satisfactory to the railroad and to the ship owners, the War Department compelled the road to place the new structure 90 ft. back or north of the harbor line. A new channel providing a 23-ft. draft was dredged to reach the new site.

Buffalo is the western terminus of the Lackawanna and the coal docks are provided to transfer anthracite coal for lake points west of Buffalo, from cars to lake-going vessels. By far the greater part of the freight moved by this road is

and 1,100 ft. long with its south line co-incident with the north harbor line, a new channel 66 ft. wide, which is dredged north of and the full length of the protection pier, the necessary foundations for the machine, a concrete deck extending each way along the new channel from the machine foundation with a total length of 1,100 ft., the fabrication and the erection of a mechanical car dumper, the necessary approach and run-off reinforced concrete trestles and the entire remodeling of the storage, load and empty yards operated in connection with the car dumper.

The terminal yard has a capacity of 127 cars with a storage yard accommodating 55 cars, a load yard holding 36 cars and the empty yard, 36 cars. By utilizing the thoroughfare track for storage an additional 18 cars can be placed in the yards. The main coal storage yard is provided at the East Buffalo terminal about six miles east



Map and Profile of the Dock and Yard

coal from the anthracite fields near Scranton, Pa. While most of the coal is shipped to the Atlantic Coast more than 3,000,000 tons is handled through Buffalo each year. Of this amount, 1,500,000 tons is handled over the dock and about an equal amount goes forward by rail. As the Great Lakes are not navigable during the winter months, the coal movement through the docks is concentrated in the seven months from May to November. The new layout was planned to care for a considerable increase in this tonnage.

The all-rail shipments are continued through the winter months. A large amount of winter-shipped coal is also usually handled over the dock and stored in boats which tie up under load to await the opening of navigation. For emergency use, a 150,000 ton coal storage trestle is provided at Cheektowaga, about 10 miles east of Buffalo.

The new layout consists of a protection pier 24 ft. wide

of the site of the new dock where provision is made for holding more than 1,000 cars. The coal trains, as hauled in from the East Buffalo storage yard, average about 40 cars each, and the yard is planned to provide space for three trains.

THE HOPPER CAR UNLOADER.

The car dumper has a guaranteed capacity of 30 cars per hour and is designed to handle cars of a total weight of 224,000 lb., car and coal combined, and of a length of 52 ft. over the bumpers. The cradle rail is placed 27 ft. above the mean lake level and operates through 21 ft. in elevation. The pan of the dumper has a double bottom, a set of wearing plates being provided. These wearing plates are so riveted on that when worn out they can be removed without damage to the structural frame work of the pan.

The pan is equipped with a telescopic chute for easing the coal down into the hold of a boat with a minimum of breakage.

As the coal is dumped from the car it will be screened by passing over a set of adjustable screening bars located in the bottom of the pan. The screenings are transferred by a worm conveyor and bucket elevator, operated by motors, to a storage bin from which they can be dumped by gravity into cars standing on the track leading over the dumper or dropped to the floor of the boiler room for use as fuel.

The machine is operated by steam furnished by two ordinary hand-fired cylindrical boilers of 200 hp. each, which are believed to be best adapted for a plant of this kind because of the use of screenings for fuel and the intermittent steam requirements.

Although feedwater heaters are not ordinarily installed at plants of this kind, a Cochrane open heater of 500 hp. capacity is installed here. Special grates for burning hard coal screenings are used. By use of these heaters it is hoped to raise the temperature of the feed water to 200 degrees F. before it enters the boilers.

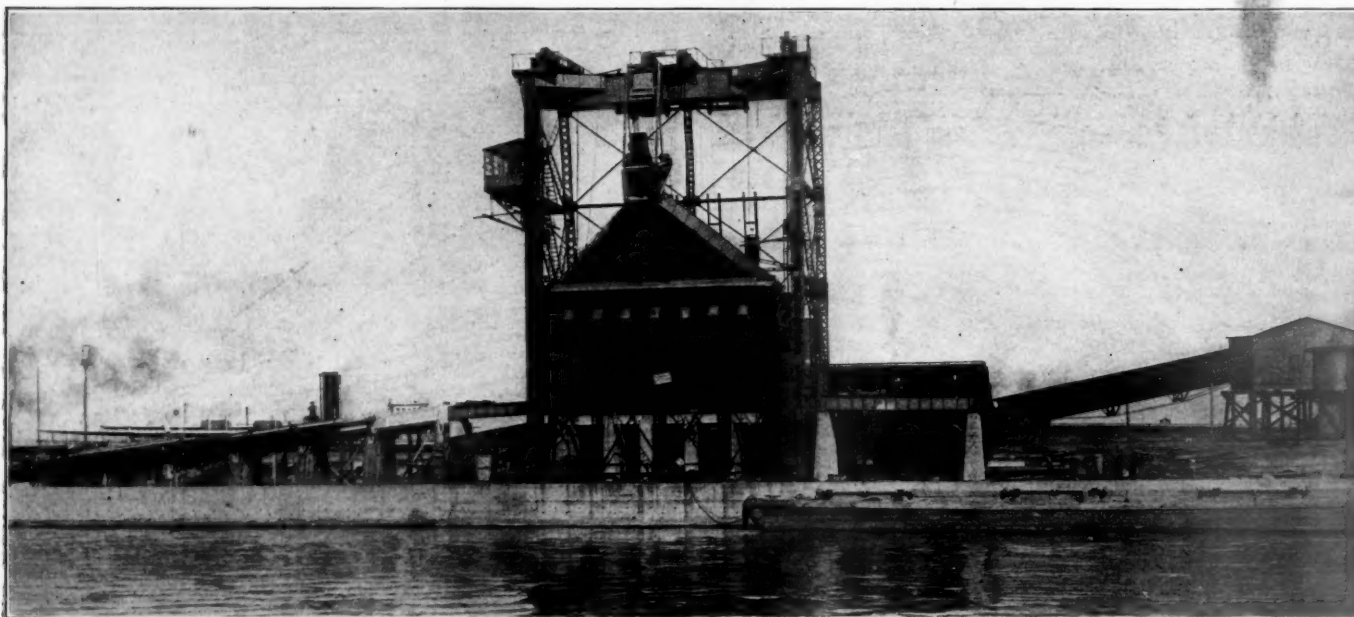
As the plant is not intended to be used during the winter time, no provision has been made for thawing coal that may

pit to the proper position to repeat the movement. This operation results in keeping a car at the machine at all times.

THE BOX CAR UNLOADER.

As a certain amount of the coal carried by the Lackawanna is loaded at the mines into box cars, it was desirable to provide an unloader for these cars. Under the old plan, while nearly all of these box cars were unloaded by hand at the export trestle, some were run over a transfer trestle provided at East Buffalo and unloaded into the pockets. The coal was then loaded into hopper cars for delivery to the export trestle. Both of the above methods were expensive and undesirable.

In the new layout the box cars are run onto a tipping cradle and are held in place by end clamps operated by a 12-hp. motor. The cradle is operated by a 75 hp. motor and is controlled by a solenoid brake. A reversible device shaped like the end of a single track snow plow and movable in three directions is inserted in the side door of the car to deflect the coal to both sides as the car is tilted up endwise. In the past these machines have been used throughout the country as loaders, usually for coal or ore. To make



Front View of the Unloader

freeze in the cars other than providing space in the boiler room for an additional boiler. The boiler house is carried on a slab foundation supported on piles that were driven to rock.

The engines are of the slide valve type and are operated from an operator's cabin located at the extreme high level of the pan. The throttles and brakes are all connected with the cabin by a system of levers and cranks.

The cars are delivered to the machine by a disappearing mule, making it possible to run a car from the load yard over the mule pit prior to its return from the delivery of a car to the machine. This is accomplished by means of by-pass gates in the mule track which are interlocked with the mule engine. With the mule in the pit ready to deliver a car to the machine, the mule engine is thrown into the forward motion. This raises both by-pass gates and permits the mule to come up behind the car by means of the gate farthest from the machine. As the car is delivered to the machine the mule engine is reversed, dropping both gates and the mule returns to the pit by means of the gate nearest the machine, running under the car to the far end of the

the machine over into an unloader the reversible device described above is inserted. This device is still in the experimental state. As the box car is tilted, the coal runs out of the car into the receiving pit, and onto a flight conveyor 4 ft. wide and about 280 ft. long. This conveyor is driven by a 150 hp. motor, moves about 200 ft per minute and has a capacity of 400 tons per hour. The coal empties from this conveyor to the pan of the hopper car machine. Adjustable chutes allow for the vertical movement of the pan.

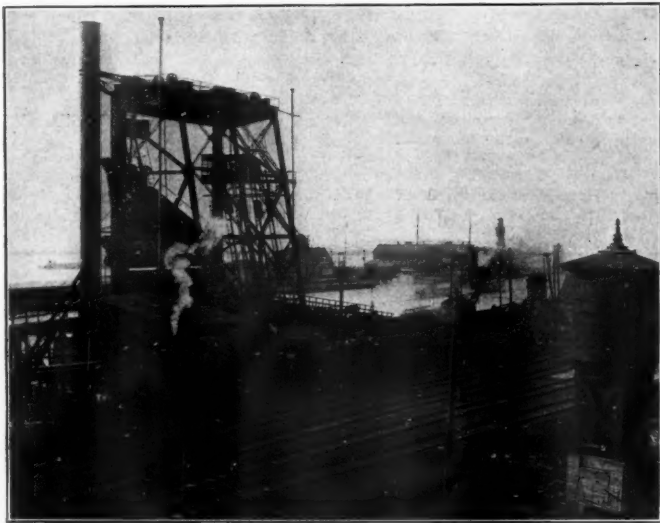
The conveyor is carried in a tunnel 200 ft. long under the yard tracks. On leaving the tunnel it rises on a slope of 32 degrees. Safety stops are provided to prevent its running back in case of breaks. Its operation is controlled by the operator of the hopper car dumper. In emergencies it can be stopped by throwing various switches located in the tunnel. One of the features of the conveyor is the driving sprockets that have a variable diameter to prevent a jerky movement of the chain.

As it takes a certain amount of time to remove the car door boards they are taken off at a joint just ahead of the dumper. About four tons of coal will ordinarily run out

before the car reaches the machine and a gravity chute is provided to carry this coal to the conveyor. It is expected that the machine will have a capacity of from six to ten tons of coal per hour.

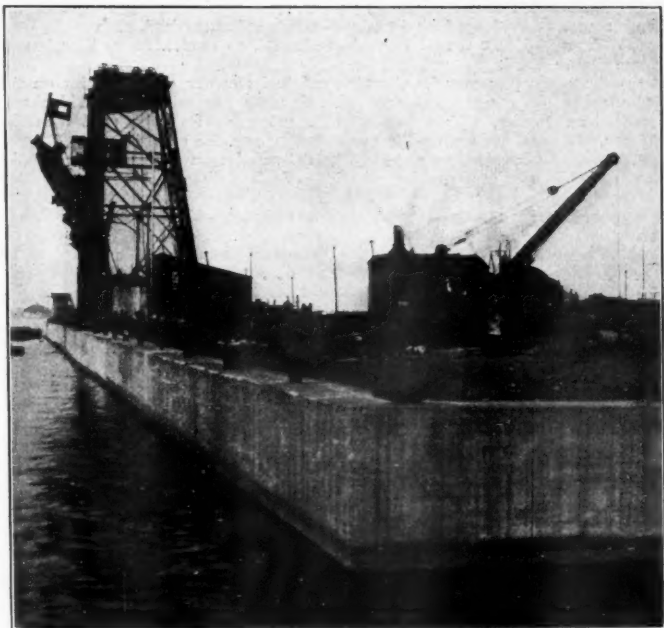
THE YARD LAYOUT

Because of the limited amount of space available, the track layout presented a difficult problem. It was impos-



Rear View of the Unloader

sible to locate the empty yard on line with the track over the dumper as is usually the case, and to maintain gravity operation it was necessary to provide three kick-backs between the load and empty yards instead of the usual one. The empty yard was built directly back of the machine and to reach this the car movement is reversed twice, as may be seen in the accompanying map. The cars leave the dumper



General View of the Site During Construction

and run out on a stub-end track to a kick-back which reverses the movement. They then drop down an incline track provided between the empty yards and the dumper to another kick-back where the movement is again reversed to reach the empty yards.

CONSTRUCTION METHODS

The work of clearing the site for the new dumper and yard was started on November 1, 1915, shortly after the close of navigation. It included the wrecking of the old trestle and a large grain elevator as well as removing the old track layout.

The contract for the dredging was awarded in December, 1915, and operations were started on December 27. The dredging was continued until January 15, 1916, when the ice in the river made navigation impossible. The dredging was then temporarily discontinued until spring when it was resumed and carried on to its completion. More than 230,000 cu. yd. of earth and 3,000 cu. yd. of rock were moved in these operations. To dispose of this material, it was necessary to load it on scows which were towed out into the lake and dumped.

The contract for the dock and the machine foundation was let early in 1916, and the actual work was started about February 1, and continued through the late winter. The foundation for the dumper was built on rock found at an elevation of 31 ft. below the dock level.

The gravel and other materials for the concrete were brought in by trucks and unloaded on the ground. The



The Unloader in Operation

material was wheeled to a $\frac{3}{4}$ -yd. mixer and the concrete was placed in the forms by dump buckets transferred from the mixer to the forms by a McMyler locomotive crane. The concrete work was carried on through the extreme cold of February and March. Tarpaulins were used to protect the concrete from frost and the interior was heated by coke-burning salamanders.

A dock with a total length of 1,100 ft. is provided along the north side of the channel each way from the machine foundation. It consists of a timber crib constructed of 12 in. by 12 in. timbers which was filled with broken stone and sunk to rock. The timber is all below the mean water level. Superimposed on the crib is a concrete dock wall, 8 ft. high by 7 ft. in width. A bond between the timber and the concrete is provided by allowing three of the 12 in. by 12 in. timbers to extend about 4 in. into the concrete.

Another interesting detail in connection with this project was the manner in which the relocation of existing water pipes leading across the river to the south pier was accomplished. The new pipes were first assembled on the south shore of the river in their proper location. On the com-

pletion of this part of the work scows securely fastened together were brought alongside the south pier and the pipe lines were suspended on the side of the scows. Tugs then towed the train of scows to the proper position and the pipe lines were lowered into the water. Divers were present to see that they went to place properly to escape damage from navigation.

The method to be followed in constructing and placing the protection pier is of especial interest. The pier is to be a reinforced concrete crib, 1,100 ft. long by 24 ft. wide and 31 ft. in height. The face walls are to be 24 in. thick and connected with transverse walls 18 in. thick, spaced 12 ft. 5 in. between faces. The reinforced bottom and top slabs are both to be 12 in. thick. The crib will be built in sections 25 ft. long. A timber float will be provided and the crib built up on this float to the proper height and then towed to place and sunk. The crib will rest on a stone fill placed after dredging to solid rock. The crib will be sunk by placing broken stone in the pockets formed by the transverse walls. The reinforced top slab will be poured after the crib is in place.

This project is being carried out under the direction of G. J. Ray, chief engineer, and G. E. Boyd, division engineer of the Lackawanna. O. H. Kellogg, assistant engineer is in charge of all construction. The preparation of the site and the remodeling of the terminal yard was all done by company forces. The Great Lakes Dock & Dredging Co. is the contractor for the dredging and concrete work, while the Wellman-Seavers-Morgan Company furnished the hopper car dumper. The box car dumper and the necessary conveyor were furnished by the Link Belt Company. The dumper itself was built by the Ottumwa Box Car Loader Company, Ottumwa, Ia.

NEW CAR SERVICE RULES PROPOSED

A new code of car service rules to be adopted by signed agreements by the railroads has been formulated by the Car Service Commission of the American Railway Association and approved by the Executive Committee, to be placed before the members of the association at a special meeting on Friday of this week in New York. It is proposed to make the new code effective on February 21, which is the effective date of the order of the Interstate Commerce Commission prescribing a partial code of car service rules to apply until May 1 but subject to modification. The new code of the American Railway Association has been designed to provide the degree of flexibility considered necessary in some provisions but also to furnish the desired rigidity in the rules intended to prevent misuse of cars.

Members of the Commission on Car Service conferred with Commissioner McChord of the Interstate Commerce Commission at Washington on Monday with reference to the commission's order, but without definite results. The 10 days which the commission allowed the roads in which to organize a committee "with plenary power to secure a relocation of cars" before it should consider issuing an order covering all classes of cars, expired on Tuesday without any new committee having been appointed. The Commission on Car Service is continuing its work in the effort to bring about an improvement in the car situation. H. W. Stanley has been appointed assistant to the chairman at the Washington office.

The new code of car service rules is printed in connection with a form of agreement to be signed by each road as follows:

"The subscribing railroad company promises and agrees with each railroad company severally which subscribes and files a counterpart hereof with the general secretary of the American Railway Association, that the subscriber will abide by and enforce the rules prescribing the handling of freight cars and designated 'Car Service Rules 1, 2, 3, 4 and 5,'

and will pay all penalties due under Per Diem Rules 1 and 3, including those which may be assessed by the Commission on Car Service under the provision of Per Diem Rule 19; Car Service Rules 1, 2, 3, 4 and 5 and Per Diem Rules 1, 3 and 19 are attached hereto and hereby made a part hereof; this agreement to continue until withdrawn by three months' previous notice in writing to the general secretary of the association."

The proposed rules are as follows:

CAR SERVICE RULES

1. (a) A foreign car received under load may be forwarded to destination.
(b) An empty foreign car must be promptly handled. It must be handled in accordance with Rule 2, 3 or 4. Provided:
(b I) That a foreign car may be loaded in local service in the direction of the home road or home route, or
(b II) May be moved once, loaded or empty, locally in an opposite direction from the home road or home route if to be loaded according to Rule 2 or 3, or locally in the direction of the home road or home route.
This proviso does not apply to cars coming under the provisions of Rule 2 (b).

(c) The movement of a foreign car, excepting as provided in these rules (1, 2, 3 or 4), will constitute a diversion.

(d) A subscriber road receiving a loaded car from a non-subscriber road, an industrial road or a shipper, must require that such car be routed in accordance with Rule 2 or 3.

(e) Foreign cars must be utilized as far as practicable for loading to other lines, in accordance with Rules 2 and 3, in preference to system cars.

(f) Any road shall have the right to agree with any other road to deviate from Car Service Rules 1, 2, 3 and 4, inclusive, in the handling of their cars.

2. (a) A foreign car belonging to a direct connection may be loaded (via any route) so that the home road shall participate in the freight rate; or must be returned to the home road direct.

NOTE.—Where a movement of traffic, in the opinion of the carriers interested, requires the return of empties at the junction point where delivered loaded and such carriers fail to agree, an appeal may be made to the Per Diem Rules Arbitration Committee, whose decision in the matter shall be final.

(b) A car when empty at a point of interchange with the home road must be confined to the switching territory of the holding road, and returned to the home road at such point, loaded or empty.

(c) An empty car may be short routed to its owner at a reciprocal rate of 3½ cents per mile, plus bridge and terminal arbitraries, with a minimum of 100 miles for each road handling the car, the road requesting the movement to pay the charges.

3. A foreign car belonging to other than a direct connection must be delivered:

(a) Loaded (via any route) so that the home road shall participate in the freight rate, or

(b) Loaded (via any route), to a direct connection of the home road, or

(c) Loaded via any road to any point on a road forming a part of the home route, as evidenced by Continuous Home Route Card.

(d) Empty to any road on the home route, as evidenced by Continuous Home Route Card.

(e) An empty car may be short routed to its owner or to a point on the home route, at a reciprocal rate of 3½ cents per mile, plus bridge and terminal arbitraries, with a minimum of 100 miles for each road handling the car, the road requesting the movement to pay the charges.

4. (a) A loaded foreign car may be delivered to a switching road to be unloaded within the switching district. Such delivery shall be indicated on the junction report by the words "For Unloading."

A foreign car received loaded in switching service when the original lading is removed, must be handled in accordance with Rule 2 or 3.

(b) An empty foreign car may be delivered to a connecting road to be loaded. Such delivery shall be indicated on the junction report by the words "For Loading." The loading road must route the car in accordance with Rule 2 or 3.

NOTE.—Car Service Rules 1 to 4, inclusive, do not apply to cars re-consigned with original lading under duly filed and published tariffs.

5. Cars shall be considered as having been delivered to a connecting railroad when placed upon the track agreed upon and designated as the interchange track for such deliveries, accompanied or preceded by proper data for forwarding and to insure delivery (including Owners' Continuous Home Route Card or substitute, as prescribed in Rule 19), and accepted by the car inspector of the receiving road.

Unless otherwise arranged between the roads concerned, the receiving road shall be responsible for the cars, contents and Per Diem after receipt of the proper data for forwarding and to insure delivery, and until they have been accepted by its inspector or returned to the delivering road.

The date fixed for the obligatory use of the Continuous Home Route Card, which is an absolute necessity to give flexibility to the rules, is May 1, 1917. Until the use of the Continuous Home Route Card becomes obligatory, cars must be handled on their record rights.

CODE OF PER DIEM RULES

1. The rate for the use of freight cars shall be 45¢ cents per car per day, but may be increased for a specified period to an amount not in excess of \$1.25 per car per day, which shall be paid for every calendar day, and shall be known as the Per Diem rate; except that where Per Diem is not reported to car owner within six months from the last day of the month in which it is earned, the rate shall be increased 5 cents per car per day.

3. Freight cars must be handled as prescribed in Rules 1, 2, 3 and 4 of the Code of Car Service Rules of The American Railway Association.

*The rate shall be 75 cents from December 15, 1916, until May 1, 1917.

A road diverting a foreign car shall pay to the owner thereof the sum of five dollars in addition to the Per Diem and shall report same as a separate item on the Per Diem Report for the month in which the car was diverted, except that where such five dollar penalty charge is not reported to car owner within six months from the last day of the month in which it accrues, the penalty shall be ten dollars.

19. (I) The Executive Committee of The American Railway Association shall appoint a Commission authorized—

(a) To increase the Per Diem rate for a specified period in times of car shortage; but the Commission shall in no case set the rate at a figure above the maximum rate named in Per Diem Rule 1, nor give less than thirty days' notice of any change in the rates.

(b) To enforce the observance of Car Service Rules 1, 2, 3 and 4, governing the handling of freight cars.

(II) The Commission, through its duly authorized representatives, shall be empowered to examine all records of members of the Per Diem Rules Agreement, and it shall have authority to institute proceedings against member lines for violations of said rules, either on its own initiative or on complaints filed with it.

Car records of any subscriber road shall be open to the inspection of any properly accredited inspector of the Commission on Car Service of The American Railway Association, or of any subscribing railroad which may desire to check same for violations of the Car Service Rules.

(III) It shall be the duty of the Commission to conduct such investigation as may in its judgment be necessary to determine the facts.

If the Commission shall find that any violation of Car Service Rule 1, 2, 3 or 4 has occurred it shall enforce the penalty provided in Per Diem Rule 3.

(IV) Any railroad may refer to the Commission any case or cases of violation of these rules.

(V) In the event the case presented is not proven, the expense of the investigation shall be paid by the complainant.

EUROPE'S TRANSPORTATION MUDDLE

By Our Special European Correspondent

"What's the matter with the railroads?" is the cry that is being raised all over Europe as the war drags on towards its third year, and the end not yet in sight. "The transportation crisis," it is called by the members of legislative bodies who should have followed their artistic careers instead of meddling with the affairs of long-suffering nations. These gentlemen rise now and then to demand why freight isn't shipped more quickly, why shoes have been boosted to \$7 or \$8 a pair, why sugar is selling at 30 and 40 cents the pound, why railway troop movements are not accomplished with greater speed—then they go ahead to prove that the fault is with the railroad managements and proceed to appoint commissions to oversee previously appointed commissions and next, adjourn for dinner.

What's the matter with the railroads? Why, it's all very simple. I'll tell you the secret. There's but one thing the matter with the railroads—the WAR—which results in the submarines that sink freight on ships, which results in lack of cheap coal to fire the engines, or of new equipment to replace old or worn equipment, which results in bridges blown up, in trains derailed by spies, in trained men mobilized for the front, in the killing off of technical engineers, and in the high cost of living and labor troubles. Briefly, the railroads are suffering from the same disease as Europe—war.

Undoubtedly, criticism may do the railroads some good. In France it has produced important results.

Albert Claveille, director of the Administration of State Railways, was last November made practically dictator of all the publicly or privately owned railways of France, and of its river, harbor and sea transportation. In the war zone, he was to act under the authority of the commander-in-chief of the armies, and elsewhere under the authority of the minister of war. While M. Claveille will doubtless be let alone and given a free hand to solve the transportation problems of the country, it is well to note that with the change of ministry this December, there was established a new minister of transportation and supplies in the person of Senator Edward Herriot, of the river Rhone district of the south of France, war mayor of the great city of Lyons, and an enlightened and capable man who may be expected to oversee the good works of M. Claveille.

"M. Claveille is either a genius or a clever politician," say persons who, because of his rapid rise to power and place, are not too favorably disposed toward him. He is a

self-made man, and did not graduate from one of the higher technical institutions of France, like most of the higher officers in public or private administrations. Personally, he is a man just turned 50, heavy set, slightly bald and of the French bourgeois type. He is somewhat plain spoken, and to an extent lacks the suavity and politeness that characterize most Frenchmen. M. Claveille's first important position was when he was made virtually general manager of the State Railways just after the Western Railroad was added to the State system. Upon him fell the burden of spending large sums of money to rehabilitate that worn-out road, and of explaining to an inquisitive parliament why it cost so much money to rebuild it. He made himself popular with the Paris public by doing what no other man had ever been able to do, that is keeping the Western Railway's suburban trains running on time. Since the war, he, along with other railway managers of France, has sustained the hard work of keeping his head above water. Early in the war, or rather a year after it started, he was one of those who saw the advisability of buying new cars and new rails while steel was relatively cheap, and he placed large orders in the United States and in Spain, although he was criticized by some shortsighted persons for spending public moneys. Indeed, he could have saved many millions to France if he had been permitted to buy when he wished. Representatives of American rail mills pleaded with him to buy while steel was cheap, but apparently his hands were tied. For some reason as yet not clear, he was unable or unwilling to invest in American coal, when that coal was offered delivered at a French port for \$12 a ton.

M. Claveille was early last winter designated to act as under secretary of artillery, for the purpose of hastening the production of shell and cannon manufactured in France. He was a little later designated as one of a commission to secure coal from England for public and private use. Briefly, he has been closely identified with the purchasing and organization branches of the republic since the first year of the war.

Considering the French transportation situation purely from the point of view of this executive, it is probable that many radical measures on his part will end unhappily for him or in the curtailment of his authority. He hasn't the undivided confidence of all his fellows, in the same measure, say, as a General Joffre, and may, therefore, be unable to wield for long the supreme authority that would make this experiment so interesting to railroad history.

Around his original appointment, since modified by making him under secretary of transportation with Senator Herriot as Minister, developed and came to a head considerable parliamentary discussion concerning all phases, both civil and military, of war transportation. As I have previously pointed out, Senator Charles Humbert, one of the ablest war organizers in France, now editor of *Le Journal*, has conducted a vigorous newspaper campaign for better war transportation during the past 18 months. In parliament it was shown, as an instance of defective organization, that France had enough coffee for 18 months and that yet an effort was being made to transport more coffee, that the docks had abundant supplies of coffee sacks taking up valuable space and that in the harbors were ships with more coffee. The question asked was why coffee, sure to be ruined before it was used, was being imported when other products were so necessary and yet so scarce. It was shown that timber was being imported from Canada, while home grown timber in the Jura Mountains was being sold to English companies. Why, it was asked, buy sugar in Cuba and neglect the supplies in French colonies, and, further, why import 45,000 tons of paper pulp from Canada when 40,000 tons of a supply already at home were being sold to Spain.

Both parliament and newspapers gave at this period, and

continue to give, much time and space to the coal question, the most vital perhaps in Europe. This question has so far been more vital than the food question, not because food is not high enough but because it can be bought, while coal is simply unpurchasable except by the rich. Despite the earlier promises of Monsieur Claveille, coal is scarce and dear in France. It was claimed that there was plenty of it at the ports of France but that there were not enough cars and canal or river boats to transport it. The coal question is largely responsible for the wide public attention given the transportation subject. With coal retailing at any old price, from \$30 to \$60 a ton, the latter rate being for anthracite, the majority of families have had to go without coal or invent new means of keeping warm, and it is not surprising if they are disturbed when told it is faulty railroad management that is responsible for their suffering.

Out of the mass of articles and speeches on the railroad question in Europe there stands one big fact that has not yet been clearly stated. There are cases where plentiful supplies of commodities exist which the railroads cannot handle, even if they are in a position to do so. The policy of regulation of consumption prevailing in Germany as well as England, France and Italy prevents them. In Italy, for instance, the government decides that sugar is a luxury, that the money spent abroad for it had best be kept at home, so it begins by taking possession of the large stores on hand, worth 15 cents a pound, and next it limits the quantity put upon the market, and finally establishes a retail price of 25 cents a pound, and only permits the shipment and distribution to each city as its stock is exhausted.

In France, the same process was gone through with automobile and illuminating oils. The oil companies possess special car tanks for shipment of this oil, but the railroads were not permitted to handle the cars. Hence the railroads were blamed by the purchasing public, it being known that there was plenty of oil in the warehouses of Rouen, Bordeaux, Lyons and Nancy. Along comes the battle of Verdun, when the oil is needed for military purposes in truck automobiles, and the embargo on oil shipment is lifted.

For 18 months the same situation has existed regarding coal. France and Italy have stored up large supplies of coal against contingencies, but the public has not been permitted to buy any except at outrageous prices. The Italian newspapers have printed long articles denouncing England for not selling coal to Italy, and in France articles of a like character have been printed showing the huge quantities of coal stored at Havre and Rouen, piled up either in railroad cars or along sidings. Of course, the public was let blame the railroads, in fact, encouraged to do so, whereas the government was simply reserving this coal for munition factories, for the railroads themselves, against the contingency that the Channel might be closed by German submarines. In mid-December, Monsieur Claveille was permitted to make a grand-stand play by taking over a dozen idle tugs tied up along the Seine and putting them to work hauling 500 coal barges from Rouen to Paris. However, not much of that coal will be burned by private individuals.

In the French Chamber last November, a deputy, either uninformed or else merely as a gallery play, denounced the French railways, and demanded to know why they were not as efficient as the German lines. Yet in Germany, railroads are having their uses for private individuals limited, compartments for "ladies only" are being eliminated on passenger trains, and no one is permitted to travel without showing cause therefor. Further, slow freight is being entirely diverted from the railways to the canal boats wherever possible. As in France and Italy, all classes of trains are being reduced to a minimum. In England, where the governmental and war use of railroads has increased enormously, reduced-price tickets for holidays have been discon-

tinued. Everywhere, in all these countries, private freight is being refused when possible, and the restrictions increased on the kind of articles shipped by parcel post.

The reasons, therefore, are that Europe has slowly realized how much a war to the death it is engaged in. The victory will be to the nations that endure, that keep their railroads running most efficiently, that keep their trained men longer in the field, that conserve their every resource. There will be many other railway dictators appointed, there will be many other complaints about railroad service, whether passenger or freight, but it must be understood that the trouble will not be inherent with the railroads. As pointed out in an article in the *Railway Age Gazette* last February, these railroads are not dropping apart, they are not going to pieces, and they will not even should the war last four years more. They may come out rather the worse for wear, short a good many thousand freight cars and their passenger coaches bedraggled.

In general, the only thing the matter with the railroads is the war, and railroad administration cannot cure that.

CAR VENTILATING SHUTTER

A shutter for ventilating box and fruit cars and at the same time keeping them weather tight and burglar proof is shown in the accompanying photograph. It is made of malleable iron and it is claimed to be indestructible and so arranged that the shutter can not be lost out. It is manufactured by the Wine Railway Appliance Company, Toledo, Ohio, and is made in two types, one for ventilating purposes only, the other to permit a larger opening for loading cars



Shutter in Closed Position

with lumber and other long material. The two types are interchangeable and are both made of standard parts.

Two side pieces and five cross pieces make up the frame, and they are securely riveted together to form a rigid construction. Brackets are cast integral with the side pieces to form supports for carrying the shutters. The lugs cast on each of the shutters form hinge joints, carrying the weight and permitting rotation. The shutters are so designed that when closed they completely fill the opening between the cross pieces. Their shape is such that when they are open they obstruct a direct passage through the ventilator, thus preventing the entrance of rain, sleet or snow.

The shutters are connected together and operated by a

shutter bar which is attached to each individual shutter with cotter pins. The frame acts as a stop to this bar, thus limiting the up and down travel. When the shutters are either fully open or closed, the center of gravity is beyond the center of the hinge lugs, so that the weight of the shutters prevents them from changing their position. While permitting ample space for proper ventilation the distance between the lattices is small enough to make it impossible for anyone to creep through and enter the car. The overall dimensions of the standard ventilator are 24 in. by 30 in. and the total weight is 120 lb., but any other size desired can be furnished.

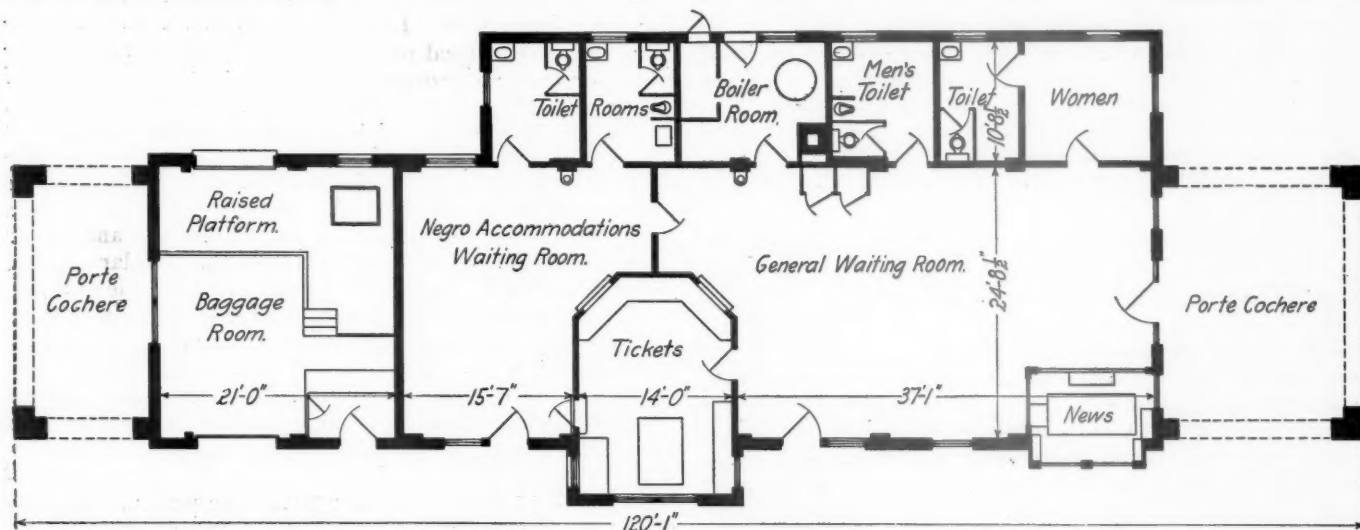
NEW FRISCO PASSENGER STATIONS

The St. Louis-San Francisco adopted a new general standard form of construction for passenger stations several

points to determine at each place are the floor areas required for the different rooms and the arrangements to meet local conditions.

The building is constructed of concrete up to the bottom of the windows; above this the walls are of hollow tile finished with stucco on the outside and white plaster inside. The roof is of flat concrete slab construction supported on concrete pilasters. A flat ceiling of plaster on metal lath is supported from the roof with an air space between, equipped with ventilators. The building is practically fire proof, the only wood used being for the windows and doors, news stand and ticket office floor.

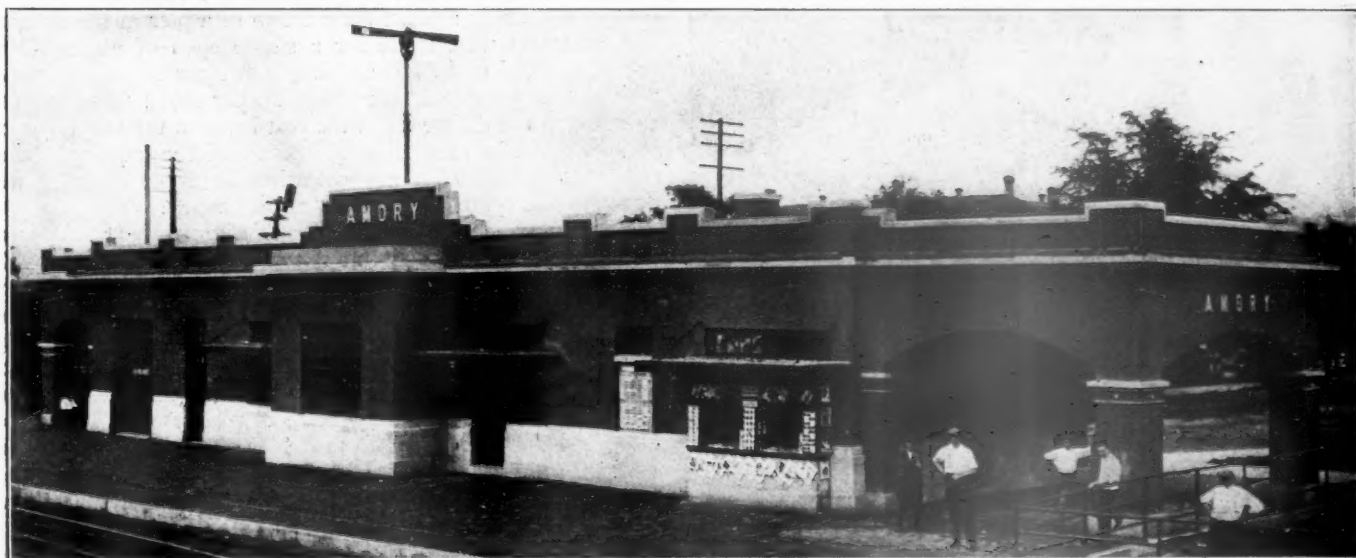
In designing this station particular care was taken to secure a low cost of maintenance. Thus the exterior stucco and concrete walls require no painting, while the interior is kept clean at a minimum expense. All floors other than in



Floor Plan of the Station at Amory, Miss.

months ago and has built five stations in accordance with these standards during the past year, one of which is illus-

the ticket office are of concrete and drain to a common point, while the seats are placed on sanitary bases. Water connec-



Track Elevation of the Station at Amory, Miss.

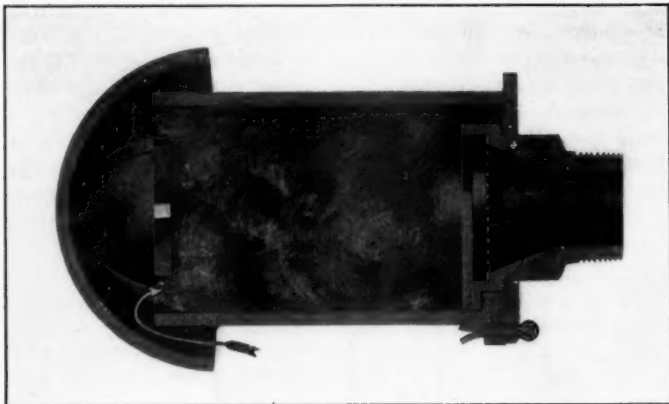
trated in the photograph. This standard was adopted for general use over the system and affords a means of overcoming the continued pressure of different communities for buildings a little more ornamental or expensive than those at adjacent points. With only the one standard the officers of the road are able to point out to the community that the only

tions are provided in each room, making it possible to flush the floors readily.

AUSTRIAN RAILWAY RATES INCREASED.—Austrian railway rates for goods have been increased 13 per cent, and there is a traffic duty of 15 per cent.

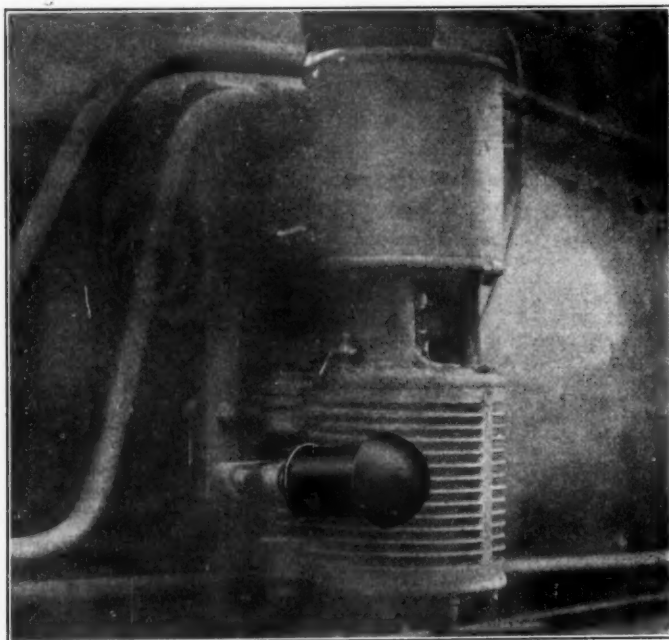
AIR STRAINER FOR LOCOMOTIVE AIR PUMPS

The Gustin-Bacon Manufacturing Company, Kansas City, Mo., has recently placed on the market an air strainer for locomotive air compressors which is made of malleable iron with either 1½-in. or 2-in. fittings, and weighs 8½ lbs. This strainer may be applied to the intake of the air com-



Section of the Locomotive Air Pump Strainer

pressor in either the horizontal or vertical position. It consists of a 6-in. by 4-in. cylinder, filled with oil-soaked curled hair, through which the air must pass before it reaches the cylinder. This cleans the air of foreign matter before it passes to the compressor. The strainer is provided with a hood that overlaps the outer wall of the cylinder for one inch, so that the air is drawn in from the under side of the hood



Strainer Applied to the Air Pump

and not directly into the strainer. This construction prevents rain or snow from getting into the strainer and finally working into the cylinder. It also prevents the possibility of squirting oil into the compressor, a practice that is becoming too common with the enginemen. The curled hair being soaked with oil, prevents the strainer from freezing in cold weather.

TRAIN DESPATCHING ON THE MIDLAND RAILWAY.—The Midland Company has 541 stations, and 1934 signal-boxes. Its telegraph wires are of a total length of 34,785 miles, the telegraph instruments number 27,792, and telephones 5,940.

THE CASTLETON CUT-OFF

The plans of the New York Central for a freight line from a point west of Albany southeast to the Hudson river near Castleton, with a bridge across the river to connections with the Hudson division for New York and with the Boston & Albany, for Boston, which have been under consideration for several years, have now been so far perfected that the company has published a sketch map of the proposed new railroad, together with some details of the railroad and the bridge.

There will be altogether about 20 miles of double track railroad and the cost of the whole work may reach \$20,000,000. The line starts from the West Shore division near Feura Bush, 8 miles west of the river, and crosses the Albany branch of the West Shore division near Selkirk. The bridge is between Castleton and Schodack Landing and its track level will be 150 feet above the water, and about the same above the Hudson division. On the east side of the river the line curves sharply to the right and extends southward about nine miles, parallel to the Hudson division, reaching the level of that line at the end of the nine miles; and the bridge line, continuing almost directly east, about four miles, connects with the Boston & Albany at a point east of Van Hoesen. The maximum grade of the connection with the Hudson division is 0.35 per cent. (ascending northward); and the ascent from the bridge to the Boston & Albany is at the rate of 0.6 per cent. The rest of the line is about level. Gravity freight yards will be established at Feura Bush.

The two main spans of the bridge are 600 ft. and 405 ft. long, respectively, the longer span being over the present channel which is 400 ft. wide. The shorter (easterly) span is over a channel which is now shallow but which is to be dredged so as to make a second channel for navigation. The bridge will have to be built one span at a time so as to leave one channel at all times open. The approaches are on towers 65 ft. long spaced 100 ft. apart. The under side of the bridge is 138 ft. above the water, or 3 ft. more than the clearance at the Poughkeepsie Bridge and at the Brooklyn Bridge across the East river.

The cost of the bridge, as estimated sometime ago, before the present era of extremely high prices, would be \$4,670,000. Parties interested in the deepening of the Hudson river had protested strongly against the erection of a pier in the stream, and estimates were made for a single span of about 1,000 ft.; this would cost \$7,330,000. (Both these estimates would now have to be increased perhaps 20 per cent.) At the least calculation the difference in the cost between the two types of bridge would be around \$3,000,000, and the meeting of the objections of the river advocates has been one cause of the delay in the completion of the arrangements.

The congestion of passenger and freight trains at Albany, to remedy which the new line is to be built, is now a considerable burden on the traffic of the company. The drawbridges are opened 40 times a day and the grade westward from Albany for several miles is 90 ft. to the mile. Twenty pushing engines are in service most of the time to help west-bound trains. The company proposes to enlarge the yard at the Albany station so as to have 14 platform tracks instead of 8, and arrangement will be made to run passenger trains over the northerly drawbridge which now is used only for freight. The company also plans important enlargements at the West Albany car shops.

THE PRINCIPAL RAILROADS IN FRANCE.—According to the report of the American industrial commission of the American Manufacturers' Export Association the six principal railroads in France in 1912 operated a total of 13,370 locomotives of 10,538,000 total horse power. Five of the six radiate from Paris and each serves its territory without competition except from canal and steamship lines. They enjoy a monopoly of all-rail communication from Spain and Portugal to the rest of the Mediterranean.

Commission May Not Determine Final Valuation

Has Tentatively Decided to Report Elements of Value
Only Without Assembling Them Into Final Figures

THE Interstate Commerce Commission does not now intend to prepare final valuations on the properties of the carriers, but will only compile data which will aid in arriving at such valuations at some later date. This was the surprising statement made by C. A. Prouty, director of the division of valuation of the commission, in the hearing of the protests of the Atlanta, Birmingham & Atlantic and the Texas Midland before the commission last Monday on the tentative valuations of these properties. The director stated that this matter was brought to his attention by the state commissioners through a resolution presented at their meeting in San Francisco late in 1915 and that, as he now interprets the law, the commission is not required to determine a final valuation and, in fact, has no authority to do so. Commissioner Clements stated that the commission itself had tentatively arrived at this same conclusion, although he asserted that it was still open to argument on this question. A. E. Helm of the Kansas state commission stated on the following day that the states maintain that Congress instructed the Interstate Commerce Commission to ascertain and report all the facts and report them in detail but did not give it authority to fix a final value. These facts can then be used in whole or in part as desired at any later date, he said.

The commission opened hearings at Washington on Monday on the protests filed by the carriers on the tentative valuations prepared by the division of valuation of the commission on the properties of the Texas Midland and the Atlanta, Birmingham & Atlantic, including its subsidiary companies. All of the commissioners were present except E. E. Clark. In addition to representatives of the Presidents' Conference Committee on Valuation appearing for the roads, the state commissions and the railroad brotherhoods were also represented. As these were the first valuation hearings before the commission itself over 200 railway men were also present.

PRELIMINARY STATEMENTS

In opening the conference, C. A. Prouty, director of the division of valuation, outlined the procedure agreed upon in a conference with representatives of the railways and of the states at which certain questions on which there was a lack of agreement were outlined. These questions included 20 on which the director thought no testimony was necessary, 12 involving general principles in which testimony should be taken, and 9 peculiar to the A. B. & A. alone. The discussions were confined largely to the points involved in these questions, which were taken up individually in turn. By agreement, the cases of the Texas Midland and the Atlanta, Birmingham & Atlantic were discussed together.

Before beginning arguments upon the questions themselves, Thomas W. Hulme, vice-chairman of the Presidents' Conference Committee, entered an objection to the adoption of principles by the commission based upon the facts submitted for the small roads since they do not afford typical examples applicable to the larger systems throughout the country. He urged that the commission withhold its final decision upon these principles until it has an opportunity to consider the reports on several roads, including some of the larger ones, for after a decision is once made it must naturally apply to the larger roads as well. He stated that neither the Atlanta, Birmingham & Atlantic nor the Texas Midland tentative valuations can properly be taken as typical or representative cases in which to settle *prima facie* important valuation questions or to establish rules, principles or

methods for general application to the properties of all carriers. The methods and principles to be applied in the ascertainment of the value of the properties of each carrier as a whole or of the other values and elements of value attaching thereto or inhering therein should not be ascertained upon consideration of two small railroads like those under consideration. The facts and the character of the problems are so different in the case of any standard railroad system that they should receive painstaking investigation by the commission and careful consideration in advance of a tentative valuation of any railroad property.

W. G. Brantley, counsel for the southern group of railways, and Pierce Butler, counsel for the western group, represented the Atlanta, Birmingham & Atlantic and the Texas Midland, respectively, and each filed a motion to suspend all further proceedings until the valuations are completed in accordance with the act. They claimed that the tentative valuations do not comply with the act in that they do not report all the facts; no final values are shown for the original cost to date, the cost of reproduction new or the cost of reproduction less depreciation; no allowances are made for the costs of materials and supplies, assessments for public improvements, etc.; nothing is allowed for the cost of acquisition of carrier lands nor for the development of the property and business; there are no complete inventories of all the properties, including the leased properties, those used jointly with other roads, etc.; the reports contain no analysis of methods by which the valuations were obtained; no figures are added for "other values or elements of value." It was also pointed out that while these valuations were dated June 30, 1914, many improvements have been made in the properties since that date, while unit prices have risen greatly prior to the filing of the reports in October, 1916.

In his introductory remarks, Mr. Brantley stated that the wide variations between the figures submitted by the division of valuation and the estimates of the carriers arose from the unwillingness of the government to permit the carriers to co-operate with it in arriving at fair unit prices and in the lack of uniformity in the construction of the valuation act. He stated that he saw no opportunity to appeal from the final decision of the commission on these valuations after they are established until the valuations are used in rate hearings or for other purposes where the rights of the properties are involved. He argued that the commission has no authority to exclude any element of value from these valuations as the purpose for which they are made is not stated and they may be used for any purpose.

Director Prouty replied to the criticisms of Mr. Brantley regarding the lack of co-operation in determining the unit prices by stating that the carriers had been consulted freely in all details except in the determination of unit prices and of land values where the government forces worked independently. He stated that no circulars of instructions or others had been sent out without first seeking suggestions from the representatives of the Presidents' Conference Committee. The railways send a pilot with each federal field party and are provided with carbon copies of all field notes, although this plan of co-operation was not fully developed and in effect when the work on the two properties involved in the hearing was being carried on.

The carriers protested that the reports did not contain any analyses of the methods by which the division of valuation had arrived at its conclusions as provided in the Act. P. J. Farrell, solicitor for the division of valuation, stated in

reply to a question of Commissioner Daniels as to when and where the analysis of methods required by the law should be made, that while the act calls for this analysis he did not construe it to require that it be included in the tentative reports, but that it would be included in the final report to Congress. He maintained that this analysis was not a legal right to which the roads are entitled and was not, therefore, necessary in tentative reports. This contention was challenged by the representatives of the carriers.

CLEARING AND GRUBBING ON PRESENT CONDITIONS

The first question considered was with reference to the amount of clearing and grubbing which should be allowed. The number of acres allowed the A. B. & A. was determined in the tentative valuation report on the assumption that the character of the right of way would be the same as that of adjacent lands on the date of valuation, while the roads insisted that allowance should be made for whatever clearing and grubbing was actually done when the railroad was constructed. W. G. Brantley maintained that while this question involved only about \$30,000 directly, the same principle applied in other ways. He argued that if the clearing and grubbing were to be based on present conditions the same principle should be adopted with reference to the removal of buildings. Mr. Farrell supported the action of the division of valuation in allowing clearing and grubbing only on present day conditions with the argument that any other basis would be mere speculation because of the difficulty or impossibility of determining conditions when many roads were built. He urged that the law never requires the impossible and that the commission must take a reasonable view of this question. Several of the commissioners showed much interest in this subject. Chairman Meyer asked whether figures showing the amount of grubbing done originally should be used if they were available. Mr. Farrell replied that they should not be used in those instances where they were at hand and not in others, and that, for sake of uniformity present day conditions should be used in all cases. Commissioner Clements then asked Mr. Farrell if he would apply the same principle in ascertaining original cost and the reply was made that the division of valuation has limited itself up to the present time to the ascertaining of such original costs as are available in the records and has made no further estimates. Director Prouty maintained that in ascertaining the cost of reproduction new it was necessary as a practical matter to assume that the clearing and grubbing would be based upon the present conditions of adjacent land and that any other basis would be speculative. He stated that the commission is following the same principle in ascertaining the valuation of land as it is cultivated today and not as it may have existed at the time that the road was built.

JOINT FACILITIES EXCLUDED

The second question involved the inclusion in the inventory of facilities used by the carrier under valuation, but owned by other roads. Pierce Butler cited stations in which the Texas Midland is a tenant and a section of the St. Louis Southwestern over which it operates with trackage rights. He protested against the exclusion of these facilities from the inventory and argued that they should be included separately with the cost figures on the three valuation bases. Commissioner Clements questioned Mr. Butler closely regarding the manner in which he would divide the valuations of such properties between the railroads, but Mr. Butler maintained that he was then arguing only for the inclusion of these properties in the inventories and was not discussing their values.

Director Prouty stated that these inventories were omitted in the report of the Texas Midland as the division of valuation objected strongly to the duplication of joint facilities in the reports of all the carriers interested. Mr. Hulme sug-

gested at this point that the director enter the property owned by a carrier in one column and that used in a separate column to present a complete inventory without at the same time including the totals for property not owned in the valuation. C. F. Newman, valuation attorney for the division of valuation at Kansas City, replied to Mr. Butler with the statement that, in framing the law, Congress had in mind the valuation of all the carriers in the country and that the completion of this work will comply in full with the requirements of the act as all property will then be inventoried to the owning roads. In its reports of those lines which operate under trackage or similar rights reference is made only to the reports of the owning carriers in which complete inventories will be found. For property of considerable size operated jointly separate inventory sections will be prepared, although Mr. Farrell replied to a question of Commissioner Hall that the objection to reporting each section of joint track separately was that of expense as the number of such sections would be multiplied greatly.

Another question presented for discussion involved the valuation of a line 14 miles long which was built by the A. B. & A. to reach certain mines and which was leased to a non-carrier company at the date of valuation, subject to the right of the owning road to operate over it, although this right was exercised on only about two miles. The representatives of the roads emphasized the fact that the valuation act reads "owned or used" and not "owned and used" and opposed the narrowing of the inventory by the division of valuation to property now operated. It was further pointed out that this illustration presented no danger of duplicating the value of this property in the report of another carrier since the leasing company is not a common carrier. The roads contended here, as elsewhere throughout the hearing, for the inclusion of all property in the inventory. Solicitor Farrell, speaking for the division of valuation, admitted that the two miles of this line used by the A. B. & A. should be included in its inventory, but would not concede that the remaining 12 miles on which the road was not exercising its right of operation should be so included.

MATERIALS ON HAND AND CASH OMITTED

The roads also took exception to the tentative valuation reports on the ground that no allowance was made in the inventory for materials and supplies on hand, working capital or current assets, although the amount of the material and supplies on hand was stated in the report. Judge Brantley emphasized the fact that materials and supplies and working capital are necessary to the operation of a road and must, therefore, be included when reproducing the property. He stated that when the A. B. & A. was reorganized two years ago \$600,000 was provided for working capital, in addition to \$300,000 already on hand. Commissioner Clements asked Mr. Brantley to point out the difference between working capital, current assets and cumulative surplus. The reply was made that any road must hold a certain amount of money and of supplies directly available to meet its bills and that these funds cannot be diverted to any other purpose. An accumulated surplus, on the other hand, is available for distribution in dividends or otherwise and may vary widely in amount. The roads contended that the statements in the reports that these values existed was not sufficient and that they should be included in the inventory. Director Prouty finally acceded to this position in large measure.

Pierce Butler objected to the lack of detail in the tentative reports served on the carriers and argued that the final valuations should give the data in detail on which the figures were based and not totals alone. A. E. Helm, of the Kansas state commission, speaking for the states, also demanded that the final reports be made in detail as the states expect to use them in rate cases. He indicated that the states might attack the

valuations and, therefore, desired that the reports present all the data possible in order that the state might ascertain those details in which they did not agree with the federal commission. Director Prouty stated in reply that the tentative valuations served on the carriers differ from the final reports which will be made to Congress and that the latter will be made in the detail required by the law. He also stated that the roads will be furnished the complete details of these valuations, although he defended the inclusion of summaries only in the tentative valuations.

At this point the attorney-general of Alabama asked permission to file a brief within 30 days stating the position of the state on this valuation, which request the commission took under advisement. This state had not previously filed a protest to the report, although notice had been served on it.

The roads attacked the action of the division of valuation in including as donations those lands for which only a nominal consideration was shown in the deeds. After stating that many deeds note only a nominal consideration for various reasons, Mr. Hulme pointed out that the roads have already complied with the order of the commission listing all gifts and donations as shown in the records and protested against the transference of all other lands for which only a nominal consideration is shown into this group. Judge Brantley stated the position of the roads to be that the presumption in cases where only a nominal consideration is shown is that such lands have been purchased, and that the burden of proof is on the government to show otherwise. A. E. Helm attacked the report of the division of valuation as incomplete and insisted that each donation be reported separately. In reply to a question of Commissioner Clements, Mr. Helm stated that he thought it was unnecessary for the commission to make a special inquiry to ascertain the actual cost of parcels of lands where nominal considerations are reported in the deed and where no other data has been presented to it. Without such evidence he thought that the nominal consideration in the deed should be prima facie evidence of the donation.

At the opening of the session on Wednesday morning the protest of the roads was heard on the exclusion from the inventory of assessments for public improvements. The division of valuation has maintained that these amounts are included in the added value of the lands and that their allowance separately would involve a duplication of values. Solicitor Farrell at this point charged the roads with attempting to load up the accounts. W. G. Brantley argued for the roads that they would be required to expend this money again for public improvements if reproducing the properties, that many of the benefits resulting from such assessments did not accrue in the immediate future and that the roads, therefore, receive no direct return, which is included elsewhere in the inventory.

The manner of inventorying interlocking plants and crossings of one road with another created extended discussion. Director Prouty emphasized the difficulty in arriving at a fair conclusion and stated that it was his original idea to give the junior road crossing under a senior road full credit for its expenditures, although the overhead structure became the property of the other road. However, the advisory board of the division of valuation has maintained that such an overhead structure replaced a portion of the original line of the senior road and that this structure should, therefore, be inventoried to the senior road, a reference to this fact being made in the inventory of the junior road. With reference to interlocking plants used by two or more companies, the division of valuation is assigning the costs to the roads on the basis of their use rather than on the distribution of the contributory facilities on the properties of the individual roads or on the basis on which the expenditures were made. Pierce Butler argued that the crossing of one road over another created a more intensive use of the property and that values

accrue to both roads; the value to the road crossing underneath is that of passage and to the crossing above that of the structure which it uses. He contended that these values must be allowed to both roads and that while the junior road should not be deprived of the money it actually expended for the undercrossing in the inventory of its property, the other road also possessed certain value because of this crossing.

The exclusion by the commission of the land on which are located industry tracks owned by a railway and for which the road holds title while the tracks are so used, even though this land may revert to the industry when the tracks are taken up, was criticised by the carriers. The division of valuation has held that the roads should be allowed nothing for such land unless it holds an indefeasible title to it, while the roads maintain that the inventory should include such lands for which they hold title at the date of valuation and that the inventories can be revised later if title should revert to other parties.

STRAIGHT LINE DEPRECIATION OPPOSED

Late Wednesday afternoon the subject of depreciation was reached. The tentative report on the A. B. & A. showed a total cost of reproduction new of road and equipment exclusive of land of \$24,154,998, and the cost of reproduction less depreciation of \$19,408,810, making the deduction for depreciation \$4,746,188, or approximately 20 per cent. W. G. Brantley stated the position of the roads, that there was no depreciation of the property as a whole where it has been properly maintained. He recommended the formation of a joint commission composed of representatives of the roads and the government, whose duty it would be to determine the proper standards of maintenance for different carriers and the extent to which these standards are departed from on any railroad. He emphasized the fact that railroad property is maintained without investing a single dollar of new money.

Mr. Brantley attacked the method of determining depreciation adopted by the division of valuation, stating that the government forces were assuming that a road is not a going concern, but is to be dismantled and the units valued separately as if for sale. He stated that the straight line method of depreciation which the government is using, if sustained, will write off the books 20 per cent of the investment of every carrier in this country. He maintained that the cost of reproduction less depreciation should differ from the cost of reproduction only by the amount necessary to bring a property up to the proper standard of maintenance. Chairman Meyer of the commission stated that the straight line method of depreciation adopted by the division of valuation has not received the approval of the commission.

Mr. Brantley was still continuing his argument on this subject at the time of adjournment Wednesday evening. At the conclusion of this subject the discussion on the valuation of lands was to follow, after which a considerable amount of evidence remained to be introduced on 12 questions on which the carriers desired to present data in support of their claims.

ORIGIN OF THE LOCOMOTIVE STEAM WHISTLE.—On May 4, 1833, there occurred an accident that gave us the locomotive whistle. It was on a level crossing between Bagworth and Thornton in England. Stephenson's locomotive "Samson" ran into a market cart containing 50 pounds of butter and 80 dozen eggs. A meeting of the directors was called, and Stephenson's suggestion of a whistle blown by steam was adopted. He went at once to a musical instrument maker in Leicester, who constructed a steam trumpet, which ten days later was tried in the presence of the board of directors. In appearance it was like a huntsman's horn, 18 in. long and 6 in. across at the top.—*Railway and Locomotive Engineering.*

LIMITATIONS OF GRATE AREA REMOVED BY STOKERS

The extent to which increased locomotive capacity is dependent on new and improved appliances is well illustrated by the increased grate area which has been used since the introduction of the stoker.

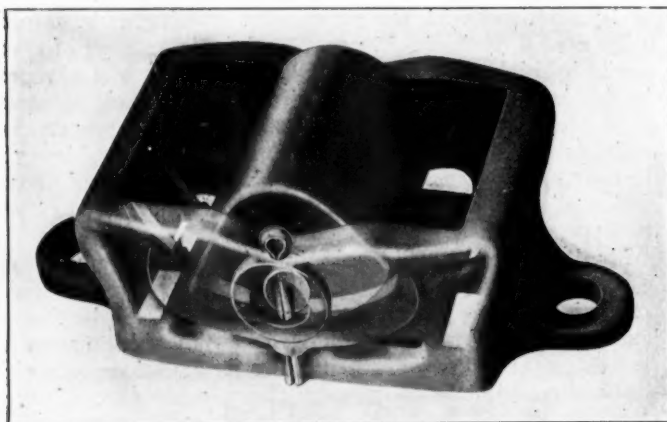
It has been demonstrated that in a well designed firebox burning bituminous coal, a rate of combustion as high as 100 lb. of coal per square foot of grate area per hour can be used without unduly lowering the efficiency of combustion. This rate of firing is seldom attained in road service on locomotives with a grate area of more than 50 sq. ft. and the full capacity, even of engines no larger than the usual Mikado or Pacific type locomotives, is attained only during short intervals unless they are equipped with a stoker. The Mallet engine when hand fired is seldom worked to its maximum power and the impossibility of satisfactorily firing a Triplex locomotive by hand can be realized from the fact that the locomotive of this type recently built for the Virginian has a grate area of 108 sq. ft. and at a rate of combustion of 100 lb. per sq. ft. of grate area per hour would require nearly five and one-half tons of coal per hour.

The Erie Triplex locomotives have a grate area of 90 ft. and are equipped with the Street stoker. That this does not represent the limit of the grate area which can be efficiently fired is shown by the fact that on the Virginian Triplex, which is also equipped with a Street stoker, the grate area has been increased by 20 per cent over the former design.

A SELF-CENTERING ROLLER SIDE BEARING

A self-centering roller side bearing is shown in the photograph, which provides for rolling contact between the bearings for ordinary angular movements of the truck and sliding contact for movements of greater extent.

This roller side bearing is made by the Wine Railway Appliance Company, Toledo, Ohio. The roller is contained in a malleable housing, which bolts onto the top of the truck side frame, in the bottom of which is placed a spring steel



Roller Bearing in Center Position

plate with two rivets in the center acting as guiding lugs. In the bottom of the steel roller are two holes fitting over these lugs. There is also a hole through the long axis of the roller; in this is slipped a wrought iron pin, the ends of which pass through slots in the housing. While the bearing is rolling, this pin is free to move in the slots. It is prevented from working out by means of a cotter.

The special feature of this bearing is that after completing the rolling travel, the roller has turned over on its side and any sliding travel occurs on the flat surface; thus scoring and chafing do not take place on the cylindrical surface.

FASTENING CROSSHEAD SHOES

A crosshead which does away with reamed holes and fitted bolts to hold the shoes in place is shown in the drawing. Such an arrangement allows the free interchange of shoes on locomotives of similar classes, a condition that may mean a great deal in increasing the roundhouse and shop output. This is known as the Markel crosshead and has been patented

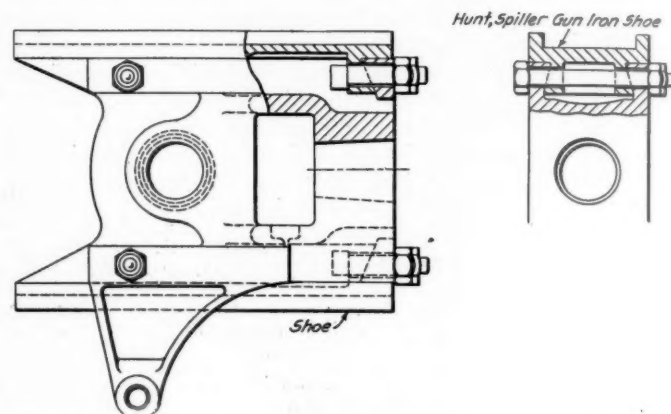


Fig. 1—Shoe Fastening as Applied to Crosshead with Piston Rod Held by a Nut

by Charles Markel, locomotive inspector of the Chicago & North Western, it being in use on that road.

Each shoe is held by but two bolts, one for the long axis and the other running across the crosshead for shoes applied on crossheads with the piston rod held by a nut. This application is shown in Fig. 1. At each point where the bolts pass through, a beveled surface will be noted on both the shoe and crosshead. When the bolts are drawn up tight, a

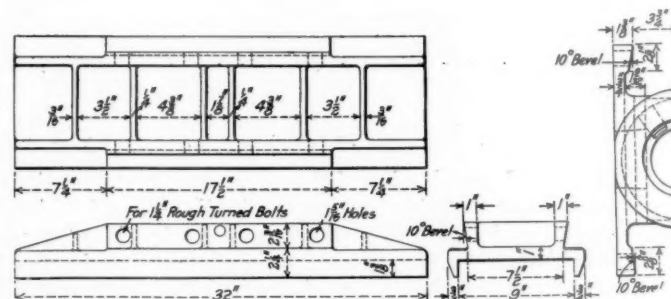


Fig. 2—Shoe Fastening as Applied to Crosshead with Piston Rod Held by a Key

wedging action takes place, which holds the shoe in place. As there are no reamed fits to wear, the arrangement when once applied should last for the life of the wearing face of the shoe.

The same method applied to crossheads in which the piston rod is held by a key is shown in Fig. 2. In this case no end bolts are used; all bolts run across the crosshead and the number is increased to four per shoe.

RAILWAY PASSES IN CHINA.—Free passes on the Chinese railways will be abolished this year, if President Li Yuan-hung approves a recommendation recently submitted to him by the ministry of communications. The recommendation states that the use of passes has been greatly abused and results in the loss of \$4,000,000 silver annually to the railway administration. This is about one-fourth of the deficit of the government railways in China. All government officers are now granted passes, and it is charged that they also permit their friends to use them.

General News Department

The Chicago & North Western has had no fatality in a passenger train accident for the last four years. During that period it carried 132,238,957 passengers.

By fire in a railroad storehouse at Houlton, Me., on Tuesday last, 20,000 barrels of potatoes awaiting shipment were destroyed; estimated loss \$100,000.

The Interstate Commerce Commission has announced a hearing at Washington on March 19 on the tentative valuation reports recently issued by the commission on the Kansas City Southern and the New Orleans, Texas & Mexico.

The Texas State Railroad Commission has had introduced in the legislature a bill empowering it to require railroads to abolish highway grade crossings. It is proposed that the cost of change shall be borne equally by the railroads and the respective counties.

The Grand Trunk of Canada, with a view to popularizing its dining cars with passengers who ride in day coaches, distributes in these cars circulars advertising the dining facilities and quoting sample items from the bill of fare, showing food sold at moderate prices.

A commission is to be appointed by the governor of Iowa to arrange for the erection of a memorial to Gen. Grenville M. Dodge, "builder of the Union Pacific," in accordance with a resolution adopted by the legislature last week. Council Bluffs is to be the location of the memorial.

The Union Pacific has announced that it will give all employees in the militia returning from the Mexican border the same positions they had when they left last year, or ones equally good. The men have been receiving full pay from the railroad during their entire absence. Up to January 1, the company paid out \$14,097 to employees in the national guard.

H. Bierman, freight claim agent of the Missouri, Kansas & Texas, at Parsons, Kan., has prepared a pamphlet for distribution among shippers, containing concise instructions as to the proper method of preparing household goods for shipment. All articles in common domestic use are listed alphabetically, and specific recommendations are given as to the packing of each.

The Southern Pacific reports that no passenger was killed in a train accident on the company's trains in 1916. There were but eight cases of injuries to passengers during the year, and of these, six resulted from the explosion of a bomb in a passenger car. Only ten employees, including those of the Pacific and Atlantic systems, lost their lives in train accidents. There were 9,892 employees in train service.

The Illinois State Civil Service Commission will hold examinations March 3 for the position of chief of accident division; salary \$150 to \$200 a month; and for the position of valuation engineer, \$250 to \$375 a month. Both positions are open to male citizens of any part of the United States who are over 25 years old. Blanks may be had from the commission at Springfield or Chicago. Applications must be received in Springfield by Saturday, February 24.

At the present writing 200 freight car repairmen in the Chicago shops of the Chicago, Milwaukee & St. Paul are striking for an increase of 3 cents an hour in their pay. Their action follows a successful strike by the passenger car repairmen on January 22, when they received an increase in pay of 1½ cents an hour, after demanding 3 cents. The company has flatly refused to grant the demands of the freight car repairmen but by way of compromise has offered to allow them to work a full 10-hour day during the remainder of the winter.

About 600 out of at least 15,000 employees of the maintenance of way department of the Illinois Central have formed a new union and threaten to strike on February 5, unless the company recognizes their organization and grants them a uniform wage schedule. The management of the Illinois Central refuses to

negotiate with the men as a body and maintains that they have no cause for complaint, inasmuch as they have benefited by an increase of \$800,000 in wages within the last year and \$400,000 has been set aside in the budget for the coming year for company houses for their use.

The Texas legislature has before it more "strike bills" than in any preceding session for several years. Senator J. J. Strickland of Palestine is the author of most of the corporation baiting bills. One of his measures provides that if a railroad fails to build where it was authorized to build to, it forfeits its charter. Another requires railroads to erect car repair sheds at every point where there are employed five or more men in car repair work; also a bill which prohibits railroads from closing their shops or reducing their force without giving thirty days' notice. An anti-blacklisting bill which has been introduced is said to be a copy of the Arizona act with drastic additions.

The Long Island Railroad has a correspondence school for teaching employees the principles of elementary mathematics, electricity, stenography and other subjects, and has just issued a new series of pamphlets. The road established this educational course about two years ago, and over 400 employees are now enrolled. Instructions are given by means of one or more pamphlets, all of which contain questions to be answered. The entire course is handled by correspondence, with no expense to the student. The new pamphlets cover the following subjects: Mathematics, Curve Reading, Primary Cells, Elementary Electricity (Direct Current), Magnetism, Electromagnetism, Magnetic Induction, Electricity in Nature, Electric Generators (Direct Current), Stenography, Italian-English. Pamphlets are being prepared on Algebra, Mechanical Drawing, Physics (Light, Heat and Sound), Electrical Measuring Instruments, Storage Batteries, Theory of Alternating Current, Electric Generators (Alternating Current), and Signal Engineering.

The New Jersey State Chamber of Commerce has appealed to the legislature of that State to repeal the full crew law, so called, and to put into the hands of the Public Utility Commission the authority to regulate the number of men in train crews. The Chamber of Commerce includes 51 boards of trade and many other societies; and with it, in this movement, is the State Grange, which has 6000 members. The memorial which has been presented to the legislature sets forth the unreasonable requirements of the present law and says that these have put upon the railroads of the State a burden of \$400,000 yearly. The law was passed three years ago. Attention is called to the enormous sums paid by the railroads in taxes in New Jersey and to the still larger sums needed to introduce new elements of safety. "Voluntary waste cannot be justified; compulsory waste should be condemned and must be stopped. . . . The New Jersey State Chamber of Commerce deprecates the present waste and believes that the public would be better served by putting the money into the elimination of grade crossings, the improvement of cars and locomotives and the installation of additional safety devices."

The Needs of Florida—and of Other States*

We need railroad regulation devoid of prejudice and free from politics, whose essentials are not cheapness, but service and safety, which, while having due regard for the protection of the public against the avarice of the unscrupulous promoter, will, at the same time guarantee to the legitimate investor a fair and equitable return upon his investment; such as is now enjoyed by men in every other legitimate business enterprise.

A regulation that does not apply to the wheels of progress the brakes of inadequate compensation nor dreams that capital can be persuaded to sit in a game where none but the dealer (and that the public) stands to win.

A regulation that does not unjustly take from the rich in

*From an address before the Traffic Club of Jacksonville, Florida, January 20, by W. L. Stanley, assistant to the president of the Seaboard Air Line.

order to increase its popularity with the masses. . . . A regulation that has for its wider horizon the attraction and protection of capital to be used in the development of the resources of this, the greatest section of the greatest country on the face of the earth. . . . A regulation that makes of every tree and mine and farm a magnet to a dollar and compels that dollar to take a chance; that educates the citizen to see that adequacy of transportation, promptness and regularity of service and the development of the resources of his state is an asset of far greater value to him than a few cents saved by a contrary system. . . . A regulation that promotes—not punishes; that attracts capital, not repels it. . . .

Disastrous Derailment in Roumania

Press despatches of January 28 report the derailment of a passenger train at Tshura, Roumania, in which 100 persons, mostly citizens of high rank, were killed.

Disastrous Collision in France

Press despatches of January 27 report a collision at Chateauf, France, between a passenger train and a freight, in which 18 persons were killed and 50 injured. The passenger train was an express from Bourges to Paris.

New York Railroad Club

At the regular monthly meeting of the New York Railroad Club on January 19 Marcus A. Dow, general safety agent of the New York Central, presented a paper on "Accident Prevention." The paper was an exhaustive one. Mr. Dow took up the subject from all angles, treating it under the following heads: Causes of accidents; importance of the human element; necessity for a trained safety director; safety committees; superintendent as chairman of safety committee; put live men on committees; safety agent at committee meetings; general or central safety committees; begin safety education with new employees; non-English speaking employees; safety bulletins and other literature; safety bulletin in examiner's room; safety rallies; the women of the home should be reached; the great responsibility of supervising officers; proper safeguards must be provided by employer; men should be educated not to create unsafe conditions; shop safety; discipline for unsafe practices; accidents to non-employees—trespassers; highway crossing accidents; accidents to passengers; school training in safety; results of safety work. Mr. Dow also showed his safety-first motion picture, "The House That Jack Built."

Public Interest in Labor Disputes Paramount

By an overwhelming vote of its members, the Chamber of Commerce of the United States has placed itself on record in favor of giving the public a decisive voice in the settlement of railway labor disputes. The result of a referendum vote submitted by the railroad committee of the national chamber, C. F. Weed, president of the Boston chamber of commerce, chairman, was announced at the annual meeting on Wednesday, at Washington.

Ballots were returned by 465 commercial organizations, boards of trade, etc., located in 45 states, the District of Columbia, Alaska and Hawaii. Each organization participating was allowed from one to ten votes, according to its membership. The questions and results follow:

1. Shall existing law be so amended or supplemented as to require full public investigation of the merits of every dispute between railroad carriers of interstate commerce and their employees, to be instituted and completed before any steps tending to the interruption of transportation shall be attempted? In favor, 1,225; opposed, 18.

2. Shall existing law be so amended as to provide that upon any board of investigation or arbitration, . . . the employers and employees shall have equal representation and the public, as having paramount interest, shall have a majority representation? In favor, 1,166; opposed, 59.

3. Should Congress establish a permanent statistical division under the Interstate Commerce Commission to study and compile statistics relating to wages and conditions of service upon railways, the records and services of this division to be immediately available to boards of investigation or arbitration considering disputes between railways and their employees? In favor, 1,171; opposed, 70.

Society of Terminal Engineers

This is the title of an association which has just been chartered under the laws of the state of New York, with headquarters in New York City, for the purpose, among other things, of promoting the study of terminal engineering and mechanical freight handling. There will be three grades of membership; members, associate members and juniors. The members' grade is open to professors of civil and mechanical engineering, and engineers specializing in terminal work. Six dollars a year, without initiation fee the first year, has been fixed as dues for membership. The society proposes to hold regular monthly meetings. The partial organization so far effected is: President, H. McL. Harding, New York; vice-presidents, Gen. W. H. Bixby, U. S. A., Washington, D. C., and John Meigs, Philadelphia, Pa.; treasurer, W. J. Barney, New York; secretary, J. Leonard, New York. The office of the secretary is at 1133 Broadway.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

- AIR BRAKE ASSOCIATION.—F. M. Nellis, Room 3014, 165 Broadway, New York City. Next annual convention, May 14, 1917, Hotel Chisca, Memphis, Tenn.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, February 20, 1917, New York.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Next convention, October, 1917, San Francisco, Cal.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, Chicago, Ill. Next meeting, June, 1917, Denver.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Annual meeting, August 8-10, 1917, Minneapolis, Minn.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—Fred C. J. Dell, 165 Broadway, New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPEFITTERS' ASSOCIATION.—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago.
- AMERICAN RAILWAY ASSOCIATION.—J. E. Fairbanks, general secretary, 75 Church St., New York.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 16-18, 1917, St. Paul, Minn.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 20-22, 1917, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June 13-20, 1917, Atlantic City, N. J.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Next convention, August 30-September 1, Hotel Sherman, Chicago.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meeting, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Next convention, May 22-25, 1917, Cincinnati, Ohio.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January, 1918, Chicago.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, Rooms 1116-8 Woodward Bldg., Washington, D. C. Annual meeting, May 30, 1917, Hotel Jefferson, Richmond, Va.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Semi-annual meeting with Master Car Builders' Association.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, Terminal Station, Central of New Jersey, Jersey City, N. J. Next meeting, May, 1917, Cincinnati, Ohio.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—W. L. Connelly, Superintendent of Telegraph, Indiana Harbor Belt, Gibson, Ind. Next annual meeting, September 18-20, 1917, Washington, D. C.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—Tom Lehon, The Lehon Company, Chicago. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMAN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual dinner, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—W. R. McMunn, New York Central, Albany, N. Y.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual convention, June 19, 1917, Banff, Alberta.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next annual meeting, August 21-23, 1917, Chicago.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. G. Crawford, C. B. & O. R. R., 702 E. 51st St., Chicago. Next meeting, May 14-17, 1917, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMAN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn. Annual meeting, September 4-7, 1917, Hotel Sherman, Chicago.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—F. W. Hager, Fort Worth & Denver City, Fort Worth, Tex. Next convention, October 16-18, 1917, Cleveland, Ohio.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Annual convention, May 22-25, 1917, Hotel Jefferson, Richmond, Va.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 11, 1917, Chicago.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Next meeting, June 13-20, 1917, Atlantic City, N. J.

NATIONAL ASSOCIATION OF RAILWAY COMMISSIONERS.—Wm. H. Connolly, 1319 Columbia Road, Washington, D. C. Next annual convention, October 16, 1917, Washington, D. C.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, 349 Peoples Gas Bldg., Chicago. Next convention, March 19-22, 1917, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—Geo. A. J. Hochgrebe, 623 Brisbane Bldg., Buffalo, N. Y. Meetings 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—F. C. Stewart, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Pittsburgh Commercial Club Rooms, Colonial-Annex Hotel, Pittsburgh.

RAILWAY DEVELOPMENT ASSOCIATION.—D. C. Welty, Commissioner of Agriculture, St. L., Iron Mt. & So., 1047 Railway Exchange Bldg., St. Louis. Annual meeting, May 9-11, 1917, Louisville, Ky.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, 1063 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Office of the President's Assistant, Seaboard Air Line, Norfolk, Va. Next meeting, October 2-4, 1917, St. Louis, Mo.

RAILWAY REAL ESTATE ASSOCIATION.—R. H. Morrison, Assistant Engineer, C. & O., Richmond, Va. Next convention, October, 1917, Duluth, Minn.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1917, Atlantic City, N. J.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, N. Y. C. R. R., Box C, Collinwood, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders' and Master Mechanics' Association.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September 18-21, 1917, Hotel Auditorium, Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SALT LAKE TRANSPORTATION CLUB.—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—L. W. Cox, N. & W., Philadelphia, Pa.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 a. m., Piedmont Hotel, Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Ag't, Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings bi-monthly, Pittsburgh.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Next meeting, June 19, 1917, Fresno, Cal.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio. Next convention, September, 1917, Chicago.

WESTERN ASSOCIATION OF SHORT LINE RAILROADS.—Clarence M. Oddie, Mills Bldg., San Francisco.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Monday in month, except June, July and August, Hotel Sherman, Chicago.

Traffic News

The Nebraska State Railway Commission has continued until February 15 its hearing on an application for increased demurrage charges.

A committee of the Nebraska legislature has recommended that Congress be asked to give the Interstate Commerce Commission specific authority to fix rules governing the interchange of cars and the loading of them on foreign roads, and to punish their violation.

Samuel C. Lancaster, engineer and builder of the Columbia River Highway, gave an illustrated lecture on the "Columbia River Highway and the Oregon Country" before the Traffic Club of Chicago on January 30. The pictures shown were made by the new Paget process of direct color photography.

F. H. Law, assistant general freight agent of the Illinois Central, has been elected second vice-president of the Traffic Club of St. Louis (Mo.), to succeed F. H. Behring, assistant general freight agent of the Southern, resigned. L. Wade Childress, president of the Columbia Transfer Company, has been elected first vice-president to succeed G. H. Gray, resigned.

C. B. Stafford has been chosen secretary of the Transportation Committee of the Louisville (Ky.) Board of Trade, and will give his entire time and attention to handling traffic matters for that organization. Mr. Stafford succeeds John J. Telford, who resigned to give his entire time to transportation matters of the Merchants' & Manufacturers' Association, of Louisville. Mr. Stafford was formerly with the Louisville & Nashville and the Frisco.

The Supreme Court of Indiana, in a decision handed down on January 26, refused to suspend further a writ of mandamus issued on December 27 by the Marion County Superior Court requiring the carriers to put into effect reduced freight rates between Indianapolis and the Illinois state line. These rates were fixed by the old Indiana railroad commission in 1906 and have been the subject of litigation ever since. The action of the court will mean that the carriers will be forced to put rates into effect for a time at least.

The Railroad Commission of Wisconsin, on January 25, ordered a general revision of freight rates in the state, effective on May 1. The order establishes new maximum distance tariffs for distances up to 400 miles and provides for joint rates between all points in the state. The joint rates will be based on a one line haul for the same distance plus an arbitrary. The new rates mean substantial reductions. Hereafter a long haul line will be required to apply to the commission for permission to meet the rates of a short line carrier. The commission decided against the establishment of a separate classification for the state of Wisconsin.

In November, 148 vessels with a net tonnage of 436,204, and carrying a cargo of 519,043 long tons, passed through the Panama Canal. Seventy-six of this number, with a cargo of 320,325 long tons, passed from the Pacific to the Atlantic. The tolls earned during the month amounted to \$420,115, of which only \$1,195 came from ships engaged in United States coastwise trade. Nearly one-half of the ships were of British nationality, or approximately twice the number registered under the United States flag, and five times the number of Norwegian vessels, the next highest, respectively, in number. The number of ships passing from ocean to ocean was seven per cent below the total for October, when 158 ships made the transit.

Ralph Peters, president of the Long Island Railroad, expects that within the present year his road will become the greatest carrier of season-ticket passengers of all the railroads serving Greater New York. The commutation traffic continues to show a remarkable growth. In 1905 the average number of monthly sixty-ride tickets sold was 6,387; in 1910 it was 11,863; in 1915, 18,866, and in 1916 it jumped to 21,233. The month of January already shows an increase of 2,677 tickets over the same month of 1916, or nearly four times the number of commutation tickets

sold in January, 1905. This January increase means the carrying daily of over 5,350 additional passengers, requiring nine extra trains of nine cars each, with 600 passengers to a train.

The Los Angeles & Salt Lake recently enclosed in the pay envelopes of officers and employees of the company a circular soliciting their co-operation in a campaign for additional freight and passenger business. The company aims to earn \$15,000,000 gross revenue in 1917, or \$3,500,000 more than has been earned in any previous year. According to the circular, if each employee influences one passenger each month to purchase a round-trip ticket from Los Angeles to Salt Lake City, or vice versa, \$2,000,000 will be added to the income of the company. If each employee obtains a routing order on a carload of freight to or from the East once in every three months, \$1,500,000 will be added to the company's receipts. If one out of ten passengers carried by the company last year influences a friend to travel in one direction over the line, the revenues of the road will be enhanced by \$2,000,000.

The Shreveport rate situation is to be taken up in the Texas legislature. A bill has been introduced, prepared by the Attorney General of the state "to compel the railroads to obey the Texas laws." The preamble recites that the railroads are disregarding their legal duties; and the bill enacts that after March 1 any road disobeying any requirement of the constitution or of the statutes, or of the railroad commission, in respect to intrastate commerce, "when such failure is not absolutely necessary in order to obey a valid regulation made by Congress under its rightful authority" shall not have the benefit of any law of Texas; nor shall any Texas court entertain jurisdiction of any cause filed by such a railroad to secure any privilege claimed by it. The law purports to forbid any railroad, in the circumstances described, to exercise the right of eminent domain, the right to have a charter amended or renewed, the right to borrow money, etc. Any road disobeying shall have its charter forfeited.

The Traffic Club of Chicago held its annual banquet at the Hotel LaSalle on January 24. The addresses of the evening were delivered by Frederick Landis, former congressman of Logansport, Ind., Dr. W. S. Sadler of Chicago and Frank J. Loesch, counsel for the Pennsylvania lines and attorney of the Union Station Company at Chicago. Mr. Loesch's speech was largely a review of the progress of the Chicago Union Station project up to the present time, with most of which the readers of the *Railway Age Gazette* are already familiar. He explained the present delay in the work on the station. The whole project, he said, had been at a standstill for the last six months, by reason of the demand of the union leaders that all labor on railroads in Cook county be unionized. The executive officers of the company had complied with every condition of their agreement with the unions that all work be done through contractors in the city of Chicago who employ union labor only. Although the jurisdiction of the labor leaders does not extend beyond the city of Chicago and the station company has no authority over the roads or employees outside the station zone, the labor leaders insisted on their demands. The presidents of the proprietary companies feel that they have yielded everything within reason and that the time has come to stand pat. They feel that they were unfairly treated in one matter in Washington a few months ago and this being in their control, they feel that however great the loss and however great the inconvenience to the public they at least are going to stand firm on this question.

A Three-Months' Excursion

A party of traffic officers of the Baltimore & Ohio, headed by Vice-president A. W. Thompson, started last Monday, by special train, on the first leg of a 5,000-mile trip over the whole system. Schedules have been sent ahead to the boards of trade in every town on the line, and these organizations, it is expected, will be waiting for the railroad men, with their grievances, suggestions and commendations.

A motion-picture machine and hundreds of feet of film, portraying various activities of the road, are carried on the train, and with them much information regarding the advantages of Baltimore as a port and railroad center. A dining car, three Pullman cars and a private car make up the train. The whole trip is expected to consume three months. Business men will be entertained aboard the train, and dinners will be given in the dining car. All this week will be spent in West Virginia.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The commission has suspended until June 1 items in the final classification providing for increased rates on bearings, dry kiln cars, stone and woolen clippings.

The commission has suspended until June 1 proposed increased rates on rags and scrap paper from points in Iowa and other States to Chicago and Illinois points.

The commission has further suspended until July 29 proposed increased rates on hogs from Sioux Falls, S. D., and other points to Kansas City and other Missouri river points.

The commission has further suspended until July 29 increased rates on cement from Iola and other producing points in Kansas and Sugar Creek, Mo., to various destinations in Nebraska.

The commission has further suspended until July 29 the cancellation of commodity rates on eggs, carloads, from points in Kansas and other states to El Paso, Tex.

The commission has further suspended until July 29 tariffs providing for the withdrawal of commodity rates on coffee, less than carloads, from New Orleans to various destinations north of the Ohio river and west of the Mississippi river.

The commission has further suspended until July 29 a general increase of 5 cents per 100 lb. in rates on linoleum, floor oil cloth and cork carpet between Mississippi and Missouri river points, also from Chicago and Mississippi river points to points in South Dakota and other states.

The Interstate Commerce Commission has set for hearing at Washington on February 26, before Examiner Gaddes, fourth section applications in which carriers throughout the country have asked authority to continue to charge higher rates for through routes than the aggregate of the intermediate rates.

The American Mining Company and others have filed a complaint with the commission, alleging discrimination as a result of the increase of five cents a ton on coal last December. The application for a similar increase on intrastate rates in Illinois and Indiana has not yet been acted upon by the commissions of those states.

The commission has further suspended until July 29 tariffs filed by Eugene Morris, C. E. Fulton and E. B. Boyd, agents, providing for the withdrawal of proportional commodity rates on lumber from Cairo and Thebes, Ill.; Evansville, Ind.; St. Louis, Mo., and related points to Des Moines and other destinations in Iowa.

The Minneapolis Traffic Association has filed a complaint with the commission against the recently increased demurrage charges, which it declares are unreasonable in that they are being imposed for detention of cars of grain and seeds consigned to Minneapolis for inspection and sale, and which cannot be promptly disposed of on account of the congestion now prevailing at Minneapolis, which is declared to be "more particularly chargeable to general transportation inefficiency."

The commission on January 27 suspended until June 1 tariffs filed by the eastern lines reducing the free time on export freight at New York and other Atlantic ports from 15 to 5 days. This action was taken after an informal hearing before the commission's suspension board on January 22, at which a large delegation of representative shippers vigorously opposed the plan of the carriers. The railway officers proposed the decrease on the theory that it would expedite the movement of cars.

Examiner W. J. Disque has held hearings in Chicago this week on the tariffs, which have been filed, revising freight rates in Central Freight Association territory. The railroads introduced testimony to show the lack of uniformity in the present rates, and that the rates are lower than corresponding rates in other territories; and also that the carriers need more revenue. Among those who have testified are W. C. Maxwell, vice-president, in charge of traffic of the Wabash; Julius H. Parmelee,

statistician of the Bureau of Railway Economics, and P. C. Sprague, division freight agent of the Pennsylvania Lines at Richmond, Ind.

A hearing on the fourth section applications of the transcontinental roads was held before Examiner Thurtell at Washington, on January 29. F. H. Wood, R. H. Countiss and H. G. Toll, representing the carriers, notified the examiner that it is their intention to place a long list of commodity rates involved, excepting those pertaining to wool, scoured wool and dry hides, on a basis that will comply with the strict application of the fourth section rule prohibiting any rates to intermediate points higher than those to the more distant points. The notice does not apply to the Southern Pacific's gulf route, or to the rates on a small group of commodities, including barley, asphalt, beans, etc., but covers commodities on which the roads feel they can ignore the competition of the water carriers both now and in the future.

Export Grain Storage Charges

Baltimore Chamber of Commerce v. Baltimore & Ohio et al. Opinion by Commissioner Daniels:

The commission finds that the carriers have not justified proposed increased charges for the storage beyond 60 and 120 days of export grain in railroad owned or controlled elevators at Atlantic ports or new charges for the storage of export grain in cars on tracks of defendants' railroad terminals at Baltimore, and Philadelphia.

The present tariffs in effect at Baltimore and Philadelphia provide for storage charges on export grain held in elevators of three-fourths of a cent per bushel for the first period of 20 days or any part of same, which includes receiving from cars and delivery in bulk to vessel, and one-eighth of a cent per bushel for each succeeding period of 5 days or any part thereof. The suspended tariffs provide for a charge of three-fourths of a cent per bushel for the first period of 20 days; one-eighth of a cent per bushel for the next 8 periods of 5 days each or any part thereof; one-fourth of a cent per bushel for the next succeeding 12 periods of 5 days each or any part thereof; and one-half of a cent per bushel for each succeeding 5-day period or any part thereof. In other words, no increases are proposed for storage during the first 60 days; from 60 to 120 days, the charges now in effect are doubled; after 120 days they are quadrupled.

It was not primarily the intention of the carriers, in increasing the storage charges in elevators or in establishing the storage charges in cars on tracks, to increase their revenues, but to force grain, stored for periods beyond 60 and 120 days, to move faster through the elevators. These ascending charges are in the nature of penalties. The new charges for the storage of export grain in cars on tracks are intended to serve a wider purpose—they are expected to remove an alleged discrimination in respect of the holding of grain in cars without charge for indefinite periods.

The commission opposes the proposed charges principally because they would not bring about the desired effects.

The Baltimore & Ohio operates two elevators at Locust Point, Baltimore, having an aggregate capacity of about 2,300,000 bushels. There facilities are provided for grading, drying, blowing, screening, mixing and cleaning grain. Adjoining these elevators is the Locust Point yard, with a track capacity of about 3,000 cars. Storage for grain cars is also provided at the Curtis Bay and Mount Clare yards, the former having a capacity of 3,000 cars and the latter 970 cars. There are facilities for loading four vessels simultaneously at Locust Point.

The Pennsylvania and Philadelphia, Baltimore & Washington operated two elevators at Canton, Baltimore, up to June 13, 1916, when one of them was destroyed by fire. The capacity of these elevators, combined, was 2,500,000 bushels. The Canton yards have a capacity of about 2,100 cars. Four vessels could be loaded at the same time at these elevators.

The Western Maryland has operated, since December 15, 1915, an elevator at Port Covington, Baltimore, with a capacity of 800,000 bushels, and an addition, with a capacity of 1,100,000 bushels, is nearing completion. The yards adjacent to the elevator provide storage for about 400 cars. Three vessels may load at the same time at this elevator.

The Pennsylvania operates an elevator at Philadelphia with a capacity of 1,800,000 bushels. When an addition, in process of

construction, shall have been completed, the capacity will be 2,180,000 bushels.

The Philadelphia & Reading operates an elevator at Port Richmond, Philadelphia. Its capacity is not shown of record, but in October, 1914, the receipts were 2,033,516 bushels and in May, 1916, 2,778,051 bushels. The deliveries from this elevator in May, 1916, were 2,444,886 bushels.

The New York Central lines, east, and West Shore have three elevators, two at Weehawken and one at the foot of West Sixtieth street, Manhattan, New York. The combined capacity is 4,439,300 bushels. Extensive yards are adjacent to the Weehawken elevators. The tracks in these yards hold from 12,000 to 15,000 cars.

The Lehigh Valley elevator at Jersey City, N. J., has a capacity of 442,000 bushels.

The Delaware, Lackawanna & Western stores grain in canal boats after delivery from cars.

The Pennsylvania Railroad Company operates an elevator at Jersey City.

Theoretically an elevator will contain its bin capacity. Practically it is said to be full when 75 per cent of its capacity is in use. But the working capacity fluctuates because, although the identity of grain is not ordinarily preserved, the various grades are separated. There are 128 grades at Baltimore and 115 at New York. In order to move current grain through to the ships, a certain number of bins must be kept empty. The processes of mixing, cleaning, blowing, screening, drying, etc., require space. Bins are often not filled, but they can not be further utilized without commingling therein different grades of grain. (42 I. C. C., 530.)

New Jersey Freight Rate Complaint

At the hearings held by Examiner La Roe in New York City January 24, J. C. Lincoln, traffic manager of the Merchants' Association, testified as to values of factories in New York as compared with New Jersey. Manufacturing concerns in the boroughs of the Bronx, Queens, Brooklyn and Manhattan number 29,429, while in Hoboken, Jersey City, Bayonne and Staten Island there are only 1,341. To allow preferential freight rates to New Jersey would result in driving many concerns out of New York altogether. Mr. Lincoln said that 5.3 per cent of the population of the United States lives at New York, and 8.9 per cent of the persons engaged in manufacture are employed at New York. Freight rates were settled by strife between the big railroads. Through the Pennsylvania and the Baltimore & Ohio, serving Philadelphia, desperate efforts were made to meet the competition of the Erie Canal and the New York Central by diversion of grain. This led to rate wars, and finally to the arbitration of the rate adjustment which should prevail between the different ports.

In the belt of water surrounding Manhattan the port of New York possesses the best belt line system in the world, permitting an easy transfer of freight between various steamship lines and railroad systems which would otherwise require a much more complicated switching arrangement. In discussions concerning lighterage at New York due consideration must be given to the cost of the railroad belt lines at Chicago, St Louis and other cities. The commission should be reluctant to change rates which would seriously injure property values, except in cases of unwarranted discrimination.

Irving T. Bush, president of the Bush Terminal Company, advocated the establishment of a freight terminal at Bayonne, N. J., and described a plan now under consideration by that city. The terminal as outlined would be larger than his own enterprise in Brooklyn.

Mr. Bush calculated that terminal costs at the port of New York are not much higher than at other cities. At other cities the railroads perform various services in delivering freight to consignees, which should be offset against the lighterage charges at New York.

The witness said that if there were sufficient room on the Jersey shore to accommodate all of the New York commerce, and if Manhattan and Brooklyn did not exist, then New Jersey could develop its facilities in the way they desire. But as the other parts of the port are here and New Jersey

cannot take care of the traffic, it would be grossly unfair to allow the Jersey shore a differential under New York. He said that he believed it is no more costly to ship goods by way of South Brooklyn than by New Jersey points, such as Bayonne and Hoboken, with their switching charges.

R. A. C. Smith, Dock Commissioner of New York City, who testified on the 26th, was questioned concerning a proposed "marginal railway" for the port of New York, under which steamships and other vessels would be unloaded and loaded directly in and out of cars on the piers. Such a railway would be enormously costly. Mr. Smith declared it impracticable. He has been in the ocean shipping business for forty years and he holds that no plan for loading and unloading ships at New York by means of cars on tracks on the piers is feasible. The miscellaneous nature of a ship's cargo, which must be stowed in the hold according to the various ports to which it is destined, would make it impossible to switch in the right cars at the right hatchway.

A railroad having tracks on a Brooklyn pier tried the experiment recently of loading a ship directly from the cars, and had to abandon the plan in order to get the ship off on schedule time. This was accomplished by transferring the remaining cars to barges and delivering the barges at the side of the ship. As many as ten barges or lighters can lie alongside a ship and load her, and it is easy to shift any barge to the desired hatchway.

The steamship companies prefer the present system of loading from barges and trucks as swifter and more convenient. The city, however, has gone to large expense to provide tracks on its new West Forty-sixth street pier.

"Whatever may be the prospect or condition elsewhere, concluded the commissioner, "the only feasible plan for New York City is the present one of loading steamships by trucks and barges, owing to the great flexibility of the waterways of the port.

"Ocean steamers travel on schedules. They may be delayed in their arrival here because of storms or fog, but they must get away from here on time, and the quickest way of loading is the only way for them—and that is the existing method."

Herbert Sheridan, representing the Baltimore Chamber of Commerce, testified concerning the vital interest of Baltimore in the question of freight rates from the west to other Atlantic ports, and declared that, if rates to Jersey City should be reduced below the rates to New York, Baltimore would at once demand, from the Interstate Commerce Commission, a reduction below the rates now prevailing to Baltimore.

Mr. Graff, a grain exporter of Philadelphia, testified concerning the export grain movement. Of grain received at Atlantic ports, nine times as much is exported as is delivered for domestic consumption. He told of the great advantage possessed by New York because of the large number of regular vessels crossing the Atlantic bidding actively against each other for freight.

Frederic Dunham, an engineer of Jersey City, gave facts concerning real estate on the Hudson river shore. There would be no difficulty in building long piers on the New Jersey side as readily and as conveniently as on the New York side. Generally speaking, the valuation of land on the New Jersey side is about one-fourth of that on the New York side. The waterfront in Jersey City is owned largely by the railroad companies and is undervalued by the assessors.

The hearings were closed on Tuesday of this week, having covered two weeks. Just before the close of the last session the counsel for the New Jersey interests said that they did not intend to ask for any change in the rates on freight for export; that they had touched on that feature of the question only when cross-questioned. The representatives of the railroads pointed out that a change could not be made in the domestic rates without also affecting the export situation.

STATE COMMISSIONS

The Public Service Commission of Indiana has issued a general order to all the railroads in the state requiring them temporarily to give preference to shipments of coal and authorizing a temporary advance in charges for re-consignment.

PERSONNEL OF COMMISSIONS

Milo R. Maltbie has resigned as a member of the advisory board of the Division of Valuation of the Interstate Commerce Commission because of his appointment as city chamberlain of New York. He held both positions from May 2, 1916, to January 9, 1917.

A. A. Keiser has been appointed a member of the Michigan Railroad Commission, in place of D. H. Crowley. The board now consists of Cassius L. Glasgow, chairman; Charles S. Cunningham and Addison A. Keiser. Mr. Keiser is mayor of Ludington. He is chairman of the Mason County Republican Committee and has long been active in-state and district politics. He is a prominent attorney, but has never been associated with railroad interests.

COURT NEWS

Injuries from Unblocked Frogs

Following *Southern Pacific v. Seley* (1893), 152 U. S., 145, the Circuit Court of Appeals, Eighth Circuit, holds that a railroad is not liable for an accident due to an unblocked frog, though it may be liable where a switchman caught his foot in a frog which had been originally blocked, but had been allowed to fall into disrepair.—*St. Louis Merchants' Bridge Terminal v. Schurman*, 237 Fed., 1.

Acceptance of Live Stock Without Bill of Lading

The Oregon Supreme Court holds that where, in accordance with a recognized custom between the parties, a shipper notified the railroad that he intended to ship a certain number of cattle next day, and had the animals ready to be loaded on the arrival of the train, such acts, known to the carrier and not objected to, constituted a delivery and an acceptance of the shipment, no written receipt being necessary.—*Blackwell v. O. S. L. (Or.)*, 161 Pac., 565.

Monopoly in Use of Track

The Illinois Supreme Court holds that a contract between a coal-mining partnership and a railroad for the laying of a spur track by the road over a right of way furnished and graded by the partnership, which gave the partnership a monopoly of the use of the track as to coal mine products, was not contrary to public policy and void, being over private property, the spur track not being part of the railroad's public way, but lying on uncondemned private property.—*Sholl Bros. v. Peoria & Pekin Union (Ill.)*, 114 N. E., 529.

Station Platform Ramps

A passenger stepped from a train to the station platform, and while waiting to speak to the station agent accidentally fell from the platform at a point of depression caused by a descent of the ground made at one end of the platform to facilitate the receipt and delivery of freight. The descent was not dangerous to passengers boarding and alighting from trains. In an action for personal injuries the Missouri Supreme Court held that the railroad was not liable.—*Hueson v. Quincy, Omaha & Kansas (Mo.)*, 189 S. W., 1,170.

Look and Listen Rule

The Tennessee Supreme Court holds that a traveler must take the precaution of looking and listening before going on or crossing a railroad track, though he may, by the finding of the jury, be excused in respect of such duty in exceptional circumstances. A woman approached a station to take a train. She must have seen and heard a passing freight train, and have appreciated that it would hinder her hearing the approach of a passenger train. It was held that she was required to use her sight to ascertain whether there was any danger in crossing. She could have seen an incoming passenger train over 100 feet away in time to have stopped before going on the track. It was held that she was guilty of contributory negligence and a directed verdict for the defendant was therefore proper.—*Nashville, Chattanooga & St. Louis v. Parks (Tenn.)*, 189 S. W., 695.

Railway Officers

Executive, Financial, Legal and Accounting

Edward E. Bashford has been appointed acting assistant secretary of the National Railways of Mexico, with headquarters at New York.

W. F. Buchannon, who resigned recently as auditor of the Georgia Southern & Florida, has been appointed auditor of the Jacksonville Terminal Company, Jacksonville, Fla.

C. P. Cooper, general agent of the executive department of the Southern Railway at Memphis, Tenn., has been appointed assistant to vice-president of the Southern Railway System, Lines West, with office at Cincinnati, Ohio.

Lincoln Green, whose election as vice-president of the Southern Railway System, with office at Washington, D. C., has already been announced in these columns, was born on April 30, 1863,



L. Green

at Columbus, Ohio. Mr. Green was educated in the public schools of Chattanooga, Tenn., and began railway work in 1876 with the Alabama & Chattanooga, now a part of the Alabama Great Southern. He subsequently served in various clerical positions on the same road, then as rate clerk in the general freight office of the Queen & Crescent Route at Cincinnati. From August, 1887, to December, 1890, he was out of railway work; he then served as rate clerk, and from September to December, 1891, as division rate clerk in the general

He subsequently served as rate clerk and from October, 1892, to November, 1895, as chief clerk to the traffic manager on the Richmond & Danville and its successor, the Southern Railway, at Atlanta, Ga., and at Washington, D. C. In November, 1895, he was appointed division freight agent of the Southern Railway at Birmingham, Ala., and from April, 1900, to August, 1904, he was assistant general freight agent of the same road and the Northern Alabama, at Washington, D. C. He was appointed general freight agent of the same roads, and also the Augusta Southern, on September 1, 1904, with headquarters at Atlanta, Ga. In April, 1905, he became freight traffic manager at Washington, D. C. and now becomes vice-president of the Southern Railway System in charge of traffic on the Lines East as above noted.

Theodore Stuart, Jr., of the legal department of the Colorado & Southern at Denver, Colo., has been appointed assistant general attorney for the Denver & Rio Grande, with headquarters at Denver, succeeding Russell G. Lewis, resigned to take up private practice.

Oliver G. Browne, assistant chief claim agent of the New York Central at New York, has been appointed attorney, with headquarters at New York. Jay C. Stineman, district claim agent at New York, succeeds Mr. Browne and S. W. Dill succeeds Mr. Stineman.

J. H. R. Parsons, general passenger agent of the Southern Pacific, Texas Lines, with office at Houston, Tex., has been elected vice-president and general manager of Morgan's Texas & Louisiana Railroad & Steamship Company, together with affiliated lines, with office at New Orleans, La.

J. B. Duke, assistant to the controller of the Southern Railway at Washington, D. C., has been appointed assistant controller of the Southern Railway System. E. H. Kemper is also

an assistant controller, both with headquarters at Washington, D. C. The positions of auditor and assistant to the controller have been abolished.

A. H. Plant, controller of the Southern Railway at Washington, D. C., has been elected also controller of the New Orleans & Northeastern. H. C. Ansley has been elected treasurer of the New Orleans & Northeastern, with headquarters at Washington, D. C. E. Milier, assistant auditor at New Orleans, La., has been appointed auditor, with office at New Orleans, La., vice H. H. Le Roy, resigned.

John Ryan, whose election as president and general manager of the Tonopah & Tidewater, with headquarters at Oakland, Cal., has already been announced in these columns, was born October 29, 1848, in Ireland. He built the above railroad and in December, 1916, became general manager of that road at Stagg, Cal., which position he held at the time of his recent election, also as president of the same road, succeeding F. M. Smith, resigned.

Morgan King Barnum, superintendent of motive power of the eastern lines of the Baltimore & Ohio at Baltimore, Md., has been appointed to the new position of assistant to vice-president,



M. K. Barnum

with headquarters at Baltimore, Md., and he will give special attention to the conservation of material of all kinds, from stationery to locomotive and car material, and such as may be used for the maintenance of way and buildings; also to expand the work of reclamation and adopt such other plans as may be advisable in the use of materials and supplies. Mr. Barnum graduated from Syracuse University in 1884 with the degree of A. B. and later received the degree of A. M. He began railway work in 1884 as a special apprentice in the

shops of the New York, Lake Erie & Western, now the Erie, at Susquehanna, Pa., and then to September, 1887, served as machinist and mechanical inspector. He was then to 1889 general foreman of the same road at Salamanca, N. Y. From January to September, 1889, he was general foreman of the Louisville & Nashville at New Decatur, Ala., and then to September, 1890, was assistant master mechanic of the Atchison, Topeka & Santa Fe, at Argentine, Kan. From September, 1890, to the following June he was superintendent of shops at Cheyenne, Wyo., and then to December, 1898, was district foreman at North Platte, Neb., and later was master mechanic of the Nebraska division at Omaha, Neb., on the Union Pacific. From December, 1902, to February, 1903, he was assistant mechanical superintendent of the Southern Railway and from February, 1903, to April of the following year he was superintendent of motive power of the Chicago, Rock Island & Pacific. In June, 1904, he was appointed mechanical expert of the Chicago, Burlington & Quincy and left that road in April, 1910, to become general superintendent of motive power of the Illinois Central and the Yazoo & Mississippi Valley. In July, 1913, he was appointed general mechanical inspector of the Baltimore & Ohio and in September, 1914, was promoted to superintendent of motive power of the same road, which position he held at the time of his appointment to the new position of assistant to the vice-president, with headquarters at Baltimore effective February 1.

The executive officers of the Southern Railway System are now as follows: Fairfax Harrison, president, with headquarters at Washington, D. C.; T. C. Powell, vice-president, resident executive officer in the West and in charge of traffic lines west, with office at Cincinnati, Ohio; H. B. Spencer, vice-president, in charge of construction, purchases, real estate, etc., with office at Washington, D. C.; E. H. Coapman, vice-president, in charge of operation, with office at Washington; H. W. Miller, vice-

president, resident executive officer at Atlanta, with office at Atlanta, Ga., and Lincoln Green, vice-president, in charge of traffic lines east, with office at Washington.

The following general agents of the executive department of the Southern Railway have been appointed executive general agents of the Southern Railway System, and will report to, and perform such duties as may be assigned to them by the president or the vice-presidents, and their authority will be respected on all lines: R. B. Pegram, with headquarters at Memphis, Tenn.; L. Sevier, with headquarters at Birmingham, Ala.; J. H. McCue, with headquarters at Bristol, Va.-Tenn.; E. C. Gatewood, with headquarters at Rectortown, Va.; E. M. Durham, Jr., with headquarters at Chattanooga, Tenn. The following have also been appointed executive general agents: T. F. Steele, with headquarters at New Orleans, La.; H. M. Cobb, with headquarters at Charleston, S. C.; C. L. Candler, with headquarters at Norfolk, Va.

George R. Loyall, who has been appointed assistant vice-president of the Southern Railway System with headquarters at Washington, D. C., as has already been announced in these columns, was born in Albemarle county, Va., and was educated in the common schools. He began railway work with the Chesapeake & Ohio and served at various places as telegraph operator and station agent. He then went to the East Tennessee, Virginia & Georgia at Knoxville, Tenn., serving consecutively as car record clerk, operator, train despatcher, chief despatcher and master of trains. He subsequently entered the service of the Southern Railway and served consecutively on that road as superintendent of the Louisville division, also of the Asheville division and of the Knoxville division, then as assistant general superintendent of the Middle district at Knoxville, Tenn. Mr. Loyall was then appointed general superintendent of the Eastern district with headquarters at Charlotte, N. C., and later became general superintendent of the Middle district with headquarters at Knoxville, Tenn. He now becomes assistant vice-president (operation) of the Southern Railway System with headquarters at Washington, D. C.

Operating

C. G. Mitchell has been appointed assistant trainmaster of the Montana division of the Northern Pacific, with headquarters at Livingston, Mont.

T. J. Brady, whose appointment as superintendent of the Pittsburgh division of the Baltimore & Ohio, has already been announced in these columns, was born on December 25, 1885, in Ireland. Mr. Brady entered the service of the Baltimore & Ohio on April 1, 1902, as freight handler at Chicago, and subsequently served as clerk and car tracer. In 1906 he became secretary to the superintendent at Pittsburgh, Pa., and later served as secretary to the general superintendent at the same place. On August 1, 1911, he was appointed assistant trainmaster, and in November, 1913, he was appointed trainmaster, which position he held at the time of his recent appointment as superintendent of the Pittsburgh division of the same road, with headquarters at Pittsburgh, Pa., as above noted.

F. W. Boardman, general mechanical inspector of the Texas & Pacific at Dallas, Tex., has been appointed fuel agent, reporting to the general manager.

J. K. Savage, superintendent of the Canadian Pacific at Regina, Sask., has been appointed superintendent of the Smiths Falls division, with office at Smiths Falls, Ont.

H. C. Chace has been appointed superintendent of telegraph of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kans., succeeding L. M. Jones, transferred.

W. T. Henderson has been appointed trainmaster of the Pittsburgh, Cincinnati, Chicago & St. Louis, with headquarters at Logansport, Ind., succeeding B. C. Cooper, transferred.

F. C. Edwards has been appointed assistant to the general manager of the Atchison, Topeka & Santa Fe, western lines, with office at Amarillo, Tex., succeeding E. A. Goeldner, transferred.

H. J. Moore, division engineer of the Atchison, Topeka & Santa Fe, with office at Arkansas City, Kansas, has been appointed general inspector of transportation, eastern lines, with headquarters at Newton, Kans.

M. Helstrom, superintendent of the Duluth, Winnipeg, & Pacific, with headquarters at Virginia, Minn., has been appointed superintendent of the Calgary division of the Canadian Northern, with office at Winnipeg, Man.

Daniel Daly, general inspector of transportation of the Atchison, Topeka & Santa Fe, western lines, with office at Amarillo, Tex., has been transferred with same title to the eastern lines, with headquarters at Topeka, Kans.

Albert Ewing, trainmaster of the Atchison, Topeka & Santa Fe, with office at Chillicothe, Ill., has been appointed superintendent of the newly created Slaton division, with office at Slaton, Tex. He is succeeded by G. H. Minchin.

H. H. Smith has been appointed superintendent in charge of operation and traffic, of the Wadley Southern with headquarters at Wadley, Ga. The position of general manager made vacant by the recent death of R. J. Harlan, has been abolished.

C. W. Van Horn, whose appointment as superintendent of the New Castle division of the Baltimore & Ohio, with headquarters at New Castle, Pa., has already been announced in these columns; was born on January 17, 1879, at Clarksburg, W. Va., and was educated in the public schools and at Salem College. He entered the service of the Baltimore & Ohio as a clerk at Fairmont, W. Va., in June, 1901, and later served as agent successively at Byron, W. Va.; at Flemington, and at Clarksburg. In October, 1910, he was appointed general yardmaster at Clarksburg, and on April 1, 1911, was promoted to chief clerk to the general superintendent at Baltimore, Md. A few months later he was advanced to trainmaster of the Monongah division, at Grafton, W. Va., and then served in the same capacity at Chicago, and later was terminal trainmaster at Chicago Junction, Ohio. He was promoted to assistant superintendent of the Pittsburgh division on April 1, 1916, which position he held at the time of his recent appointment as superintendent of the same road, as above noted.

W. M. Whinton, trainmaster of the Smithville district of the Missouri, Kansas & Texas Railway of Texas, has been transferred to Muskogee, Okla., in a similar position on the Missouri, Kansas & Texas in charge of the line from Muskogee, Okla., to Denison, Tex.

H. B. Lautz, assistant to the general manager of the Atchison, Topeka & Santa Fe, eastern lines, with office at Topeka, Kans., has been appointed acting superintendent of the middle division with headquarters at Newton, Kans., succeeding H. W. Sharp, granted a leave of absence on account of ill health. E. A. Goeldner, assistant to the general manager, western lines, with office at Amarillo, Tex., has been transferred to Topeka to succeed Mr. Lautz.



T. J. Brady



C. W. Van Horn

George A. Poore, whose appointment as superintendent of the Providence division of the New York, New Haven & Hartford, with headquarters at Providence, R. I., has already been announced in these columns, was born on August 21, 1867. He began railway work as a stenographer in 1890 with the Illinois Central, and was later clerk to the superintendent and chief clerk to the general superintendent. In 1900 he went to the Delaware, Lackawanna & Western as chief clerk to the general superintendent, and from 1904 to 1912 served as superintendent on three different divisions of the same road. In 1912 he entered the service of the New York, New Haven & Hartford, and was engaged in special work for a year when he was appointed chief clerk to the general manager, which position he held at the time of his recent appointment as superintendent of the Providence division of the same road, as above noted.

Warren Cleaveland Kendall, whose appointment as superintendent of transportation of the Boston & Maine with headquarters at North Station, Boston, Mass., has already been announced, was born on May 22, 1877, at Pompanoosuc, Vt. He was educated at St. Johnsbury academy and later at Dartmouth college and began railway work in August, 1899, as telegraph operator in the general offices of the Boston & Maine, remaining in that position until the following November. He then served as clerk in the superintendent's office until March, 1902, and then in the vice-president's office until August, 1903. He was subsequently chief clerk to the assistant general manager and later to the general superintendent and from March, 1912, to the following December, served as superintendent of transportation. In December, 1912, he became superintendent of car service and on January 1, 1917, was appointed superintendent of transportation of the same road.

Traffic

Leonard Smith has been appointed commercial agent of the Lehigh Valley, with headquarters at Cleveland, Ohio, vice E. R. Bardgett, resigned.

J. H. Skillen, New England freight and passenger agent of the Chicago, Milwaukee & St. Paul, with office at Boston, Mass., has been appointed commercial agent, with headquarters at Chicago, Ill.

C. S. Fay, general freight agent of the Southern Pacific, Texas Lines, has been appointed traffic manager of the Morgan's Louisiana & Texas Railroad & Steamship Company, with office at New Orleans, La.

O. F. Spindler, assistant general freight agent of the Chicago Great Western at Minneapolis, Minn., has been given jurisdiction over the freight traffic of the Southern division with headquarters at Des Moines, Iowa.

C. F. Woods, assistant general passenger agent of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, has been appointed general passenger agent, with headquarters at New Orleans, La., vice G. C. Kelleher, resigned.

R. C. Campbell has been appointed general agent of the traffic department of the Georgia Railroad, with office at Atlanta, Ga., vice S. W. Wilkes, promoted; and H. J. Davis, soliciting freight agent at Atlanta, has been appointed commercial agent, with offices at Athens, vice Mr. Campbell.

W. J. Curtis, district passenger agent of the Atchison, Topeka & Santa Fe with office at Topeka, Kans., has been appointed general freight and passenger agent with headquarters at Salt Lake City, Utah, succeeding E. R. Leis, who has been appointed general freight agent at Denver, Colo., vice R. H. Morehouse assigned to New York City as general freight agent.

Engineering and Rolling Stock

T. N. Murphy has been appointed road foreman of engines on the Atchison, Topeka & Santa Fe, middle division, with headquarters at Newton, Kans.

C. B. Clegg has been appointed acting division engineer of the Pecos division of the Atchison, Topeka & Santa Fe, with office at Clovis, N. Mex., succeeding J. W. Walter.

W. F. Zane, inspector of signals of the Chicago, Burlington &

Quincy, has been appointed assistant signal engineer, with headquarters at Lincoln, Neb., succeeding M. J. Fox, resigned.

A. Roesch, acting master mechanic of the Colorado & Southern, with office at Denver, Colo., has been appointed master mechanic of the Atchison, Topeka & Santa Fe, with same headquarters, succeeding J. M. Davis.

B. F. Hines, signal engineer of the New Orleans & North-eastern, has been appointed signal engineer of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, with headquarters at Vicksburg, Miss.

F. T. Hatch, chief engineer of the Vandalia Railroad, with office at St. Louis, Mo., has been appointed chief engineer maintenance of way on the Pennsylvania Lines West of Pittsburgh, with same headquarters.

R. S. Charles, engineer maintenance of way, Detroit division of the Wabash, with office at Montpelier, Ohio, has been appointed engineer maintenance of way, Peru division, with headquarters at Peru, Ind. He is succeeded by W. K. Walker.

J. W. Burt, engineer maintenance of way of the Cleveland, Cincinnati, Chicago & St. Louis, at Wabash, Ind., has been appointed engineer maintenance of way of the Chicago division at Indianapolis, vice R. Ferriday, resigned, and C. W. Engle has been appointed engineer maintenance of way of the Michigan division, vice Mr. Burt.

Louis Yager, division engineer of the Northern Pacific at St. Paul, Minn., has been appointed acting engineer maintenance of way of the lines east of Paradise, Mont., with headquarters at St. Paul, Minn., succeeding Andrew Gibson, granted leave of absence on account of continued illness. Bernard Blum has been appointed acting division engineer, with office in St. Paul, vice Louis Yager, temporarily transferred.

Charles A. Gill, general master mechanic of the Maryland district of the Baltimore & Ohio, at Baltimore, Md., has been appointed superintendent of motive power of the Eastern lines, with headquarters at Baltimore, succeeding M. K. Barnum, promoted. A. K. Galloway, general master mechanic of the northwest district at Cincinnati, O., succeeds Mr. Gill. Wm. Malthaner, superintendent of shops at Newark, O., succeeds Mr. Galloway and Frank E. Cooper, general foreman succeeds Mr. Malthaner.

W. D. Deveny, master mechanic of the Arkansas river and Colorado divisions of the Atchison, Topeka & Santa Fe, with office at La Junta, Colo., has been appointed mechanical superintendent, southern district, with headquarters at Amarillo, Tex., succeeding A. Dinan, who has been appointed master mechanic of the Panhandle division, Wellington, Kans. I. H. Drake, master mechanic of the Pecos division, with office at Clovis, N. Mex., has been appointed master mechanic at La Junta, succeeding W. D. Deveny, and H. H. Stevens has been appointed master mechanic at Clovis, vice I. H. Drake.

In connection with the regrouping of the Southern Railway lines for purposes of administration, D. M. Case, superintendent of signals of the Queen & Crescent, has been appointed signal and electrical engineer of the Southern Railway, lines west. His territory includes the Cincinnati, New Orleans & Texas Pacific, the Alabama Great Southern, the New Orleans & Northeastern, the New Orleans Terminal, and certain sections of the western lines of the Southern. C. B. Behnke has been appointed supervisor of signals of the newly organized lines west with headquarters at Hattiesburg, Miss.

C. E. Goings, formerly supervisor of signals of the Pennsylvania attached to the signal engineer's office, has been promoted to inspector of signals with the same headquarters. E. L. Watson, supervisor of signals of the Philadelphia division succeeds Mr. Goings. W. I. Bell, supervisor of signals in the signal engineer's office has been transferred to the West Jersey & Seashore, as supervisor of signals with headquarters at Camden, N. J. Guy Toft, supervisor of signals on the Williamsport division has been promoted to acting supervisor of signals of the Pittsburgh division with headquarters at East Liberty, Pa., succeeding A. B. Pollock appointed acting assistant trainmaster at Pittsburgh. H. N. Stump, supervisor of signals of the Allegheny division, has been promoted to acting supervisor of signals of the Williamsport division with headquarters at Williams-

port, Pa., succeeding Mr. Toft, promoted. E. G. Bauman, assistant supervisor of signals, Philadelphia division, has been appointed acting supervisor of signals of the Allegheny division with headquarters at South Oil City, Pa.

OBITUARY

Oliver Howell Crittenden, chief engineer of the International & Great Northern, died at his home in Houston, Texas, on January 27 after a brief illness.

A. P. Griest, auditor of ore and coal freight receipts of the Pennsylvania Lines West, at Pittsburgh, Pa., died on January 15, at his home, in Crafton at the age of 64.

William A. Bissell, assistant traffic manager of the Atchison, Topeka & Santa Fe with headquarters at San Francisco, Cal., died at his home at Alameda of heart failure on January 30. He was born on January 8, 1848, at Lyons, N. Y., and began railway work in November, 1864, as messenger boy in the stores department of the Michigan Central at Detroit, Mich. He subsequently served in various positions on several different roads until September, 1888, and then to January, 1895, as general freight and passenger agent of the Atlantic & Pacific and manager of the Atlantic & Pacific Fast Freight Line. From January 1, 1895, to February, 1899, he was assistant traffic manager of the Atchison, Topeka & Santa Fe System, and general freight agent of the Atchison, Topeka & Santa Fe Railway and since February, 1899, was assistant traffic manager of the Atchison, Topeka & Santa Fe System.

William Thornburgh, formerly general superintendent of the Columbus, Sandusky & Hocking, died at his home at Granville, Ohio, January 23, 1917. He was born at Cardington, Ohio, on September 23, 1841. He entered railway service on March 11, 1859, as a water boy on the old "Bee Line," now a part of the Cleveland, Cincinnati, Chicago & St. Louis. He became a brakeman on the Cleveland, Columbus, Cincinnati & Indianapolis in October, 1861, and in November, 1865, was promoted to freight conductor. In August, 1873, he entered the service of the Peoria & Rock Island as a passenger conductor, and in June, 1874, went to the Cleveland, Columbus, Cincinnati & Indianapolis as trainmaster. In May, 1878, he was appointed general superintendent and receiver of the Springfield, Jackson & Pomeroy, holding that position until April, 1881, when he became master of transportation of the Ohio Central. From November, 1881, to March, 1888, he was superintendent of the Cleveland, Lorain & Wheeling, with office at Lorain, Ohio, becoming at this latter date general manager of the Valley Railway. He was appointed assistant to the president in February, 1890, and while holding that position was also president of the Akron & Chicago Junction from the time of its organization in March, 1890, until it was acquired by the Baltimore & Ohio. From January 1 to June 1, 1892, he was also general manager of the Cleveland, Wooster & Muskingum Valley. He became general manager of the Cambridge Consolidated Coal Company on June 1, 1892, and a year later was made traveling representative of the Butler Draw Bar Attachment Company. He was appointed superintendent of the Columbus, Sandusky & Hocking in November, 1895, and in January, 1897, was promoted to general superintendent of the same road as reorganized. After leaving railway service he became general manager of the Seamless Steel Tubes Company, Detroit, Mich. More recently he was an extensive coal operator. One son, William H. Thornburgh, is vice-president of the Harrison Railway Specialties Company of Chicago, Ill.



W. Thornburgh

Equipment and Supplies

LOCOMOTIVES

THE CHICAGO & NORTH WESTERN is in the market for 30 locomotives.

THE UNION RAILROAD has ordered 2 six-wheel switching locomotives from the Baldwin Locomotive Works.

THE SURRY, SUSSEX & SOUTHAMPTON has ordered one ten-wheel locomotive from the Baldwin Locomotive Works.

THE CENTRAL PORTUGALETE (Cuba) has ordered one Consolidation locomotive from the Baldwin Locomotive Works.

THE NEW YORK CENTRAL has ordered 50 locomotives from the American Locomotive Company, and 45 from the Lima Locomotive Works.

THE ARANCO COMPANY, LTD. (Chile) has ordered one six-wheel and one Prairie type locomotive from the Baldwin Locomotive Works.

THE SEABOARD AIR LINE, reported in the *Railway Age Gazette* of January 19 as being in the market for Santa Fe and Mallet type locomotives, has ordered 10 Santa Fe and 20 Mallet type engines from the American Locomotive Company.

THE PENNSYLVANIA RAILROAD announces that orders will shortly be placed at its Altoona shops for the construction of 225 locomotives, to be used to replace locomotives now in service and to apply on the company's 1917 equipment program. Included there are 50 switching engines, 40 passenger and 135 freight locomotives.

THE PERSIAN GULF & MESOPOTAMIA DEVELOPMENT COMPANY, LTD.: J. S. Popper, 100 Broadway, New York, acting for this company has issued a long list of equipment requirements for the railway and is asking various car and locomotive builders if they can meet the required deliveries. The equipment will be taken in installments over a period from September, 1917, to 1921, and includes the following:

313 passenger locomotives, 863 goods locomotives, 78 locomotives for mixed passenger and goods trains.

4 saloon and state cars, 85 reserved carriages, 11 dining cars, 75 first class carriages, 145 composite first and second carriages, 152 composite, first, second and third class carriages, 45 other carriages.

57 second class carriages, 126 intermediate class carriages, 221 composite and intermediate and third class carriages. 500 third class without brakes, 653 third class ambulance carriages, 17 third class ambulance carriages with brakes, 80 third class and postal carriages.

318 passenger brake vans, 19 brake vans with postal compartment, 4 postal vans, 54 carriage brakes, 150 horse boxes, 44 luggage vans, 164 miscellaneous, 18 stores vans.

12,282 covered goods wagons, 2,578 high-sided wagons, 553 low-sided wagons, 8 cattle trucks, 12 platform wagons, 64 powder vans, 242 timber trucks, 267 bolster trucks, 240 ballast wagons, 399 brake vans (all uses).

92 oil tanks, 79 water tanks, 35 gas holders.

68 cranes.

16 miscellaneous items, special work, etc.

232,000 tons of 65 lb. steel rail.

4,000,000 creosoted pine ties.

This railway line is now being surveyed from Bagdad on. This equipment will be used in India and will be used from India westward. The parent interests of the Persian Gulf & Mesopotamia Development Company, Ltd., are the financial backers of important Indian railroads.

FREIGHT CARS

THE ALASKA ENGINEERING COMMISSION is receiving prices on 14 36-ft. box cars.

THE NEW YORK, NEW HAVEN & HARTFORD has issued inquiries for 150 refrigerator cars.

THE AMERICAN RAILROAD OF PORTO RICO has ordered 100 freight cars from the Gregg company.

THE UNION PACIFIC has ordered 30 caboose cars from the Mount Vernon Car Manufacturing Company.

THE CITIES SERVICE COMPANY, through various subsidiary companies, has placed orders for 150 tank cars.

THE PENNSYLVANIA EQUIPMENT COMPANY is in the market for one second-hand 40-ft. flat car of about 100,000 lb. capacity.

THE PENNSYLVANIA RAILROAD will shortly start work in its Altoona shops on 1,000 box cars, 1,000 70-ton hopper gondola cars and 100 steel cabin cars for the Lines East.

THE FRENCH GOVERNMENT, reported in the *Railway Age Gazette* of January 19 as having ordered 3,000 freight cars, ordered these cars from the Standard Steel Car Company, and has since increased the order to 5,000 cars.

THE SOUTHERN PACIFIC, according to announcement made by President William Sproule, will build 2,000 box, 450 stock and 500 flat cars principally at its Sacramento shops. The Southern Pacific has also ordered 400 tank cars from the American Car & Foundry Company.

PASSENGER CARS

THE ATLANTIC COAST LINE has ordered 3 dining, 15 baggage and 5 baggage and mail cars from the Pullman Company.

THE SAN ANTONIO & ARANSAS PASS will build 4 combination baggage and mail cars in its own shops.

THE SOUTHERN PACIFIC is in the market for 41 coaches, 16 60-ft. baggage, 15 70-ft. baggage, 6 69-ft. baggage and mail and 5 75-ft. dining cars.

THE SUMPTER VALLEY has ordered 2 coaches, 2 passenger and baggage and 2 baggage and mail cars from the American Car & Foundry Co.

THE PENNSYLVANIA EQUIPMENT COMPANY is in the market for one second-hand combination passenger and baggage car for West Virginia delivery.

THE PENNSYLVANIA will place orders shortly at its Altoona shops for the construction of 20 passenger and baggage cars, 68 baggage cars, 2 baggage and mail cars and 2 experimental milk cars to replace other cars now in the service and to apply on the company's 1917 equipment program.

IRON AND STEEL

THE NORTHERN PACIFIC has ordered 1,570 tons of steel from the American Bridge Company.

THE WHEELING & LAKE ERIE has ordered 5,000 tons of rails from the Carnegie Steel Company.

THE PHILADELPHIA & READING has ordered 5,000 tons of rails from the Bethlehem Steel Company.

THE SOUTH AFRICAN GOVERNMENT RAILWAYS have ordered 4,000 tons of steel from the United States Steel Corporation.

THE MICHIGAN CENTRAL has placed an order with the Carnegie Steel Company for 5,000 tons of steel rails for 1917 delivery.

THE ALASKAN ENGINEERING COMMISSION has ordered 10,000 tons of steel rails from the Illinois Steel Company for the government railroad in Alaska.

SIGNALING

THE SPOKANE, PORTLAND & SEATTLE has contracted with the Federal Signal Company for automatic block signals for the protection of a number of tunnels along the Columbia river in Washington.

THE CHICAGO, BURLINGTON & QUINCY has ordered from the Federal Signal Company the materials for a 40-lever electric interlocking plant at Broadway, Kansas City, Mo. This plant which will have 37 working levers, will control the double-track swing bridge over the Missouri river on the St. Joseph division and a junction with the Chicago & Alton. The apparatus will be installed by the railroad's forces.

Supply Trade News

The Westinghouse Electric & Manufacturing Company has authorized an expenditure of \$5,000,000 to \$7,000,000 for a new plant at Essington, Pa., to provide additional facilities for its increased business.

W. E. Kelly, representing the Patton Paint Company, Milwaukee, Wis., has been appointed district manager of railway sales, with headquarters at Chicago, Ill., succeeding F. S. Hiland, resigned, effective February 1.

H. A. Matthews, manager of the sales-railway department of the U. S. Light & Heat Corporation, has transferred his headquarters from the Chicago branch office to the company's general offices at Niagara Falls, N. Y.

A new company known as The Canadian S K F Company, Ltd., with offices at 47 King Street, West, Toronto, Ont., Canada, has been organized to handle the products of the S K F Ball Bearing Company of Hartford, Conn., in Canada.

The Burdett Oxygen Company will begin operation of its Oklahoma plant, located at the Stock Yards station, Oklahoma City, on February 15, and will be in a position to furnish oxygen to users in that territory. This is the twelfth plant installed by the Burdett Company in the various industrial centers of the country.

The Ryan Car Company, Chicago, Ill., has just acquired about 50 acres of land a short distance from its present plant in that city for the purpose of building a plant for the manufacture and repair of all-steel freight cars. This company's present plant will continue to be used for the manufacture and repair of both wooden and steel cars. It is estimated that the improvements in the way of new buildings, machinery and other facilities will be between \$300,000 and \$400,000.

The United States Metallic Packing Company, Philadelphia, announces that after a long legal contest its patent No. 914,426, dated March 9, 1909, for the King ring, has been sustained by the United States circuit court of appeals for the seventh circuit, and that the supreme court of the United States has refused the petition of the Hewitt Company that it should review the action of the court of appeals. The company's patent is now definitely established, as is also the fact that the Hewitt Company's ring, the further manufacture of which its suit was brought to stop, is an infringement of its rights.

L. L. Cohen, lately connected with the Safety First Manufacturing Company of Chicago, Ill., and prior to that, western sales representative of the Johns-Manville Company, with headquarters at Salt Lake City, Utah, and also Denver, Colo., has been elected president of the Union Supply Company, with offices at 112 West Adams street, Chicago, Ill. He succeeds L. Mosier, retired on account of poor health. The Union Supply Company handles products of the Bryant Manufacturing Company, Globe Metal Company, William B. Anderson Foundry Company, Central Steel & Supply Company and the Wine Railway Appliance Company.

Henry Lindenkohl was on December 1, 1916, appointed engineer of construction of the American Locomotive Company, with headquarters at Schenectady, N. Y. Mr. Lindenkohl was born at Roselle, N. J., on December 26, 1883. He attended the public schools at Elizabeth, N. J., and later entered Stevens Institute of Technology, from which he graduated with the degree of mechanical engineer in 1905. The same year he entered the employ of the American Locomotive Company at Providence, R. I., as inspector of new buildings. In 1908 he was transferred to the general building construction department of the company at Schenectady, N. Y., which position he held until his appointment as engineer of construction.

The Central Trust Company of Chicago announces a trustee's sale of the property of the Kennicott company, Chicago Heights, Ill., the sale being made by order of the United States District

Court of Illinois. The plant has a capacity of 20,000 to 25,000 tons of plate and 10 tank cars per day. It has been operated continuously by the Central Trust Company of Illinois as receiver and trustee, and will be sold as a going plant. It is now working on two eight-hour shifts. The property includes 8 acres, with a machine shop building, tank shop, car shop and an annex power house, office building with chemical laboratory completely equipped, and numerous other buildings, shops, etc., as well as machinery, tools, patterns, etc., throughout the various buildings, and materials and stock on hand at time of sale. Bids for all of the tangible property and real estate and improvements as a single parcel (or for any part of the described assets) are returnable before Frank L. Wean, referee in bankruptcy, 437 Monadnock block, Chicago, February 14, at 11 a. m. All bids must be accompanied by a certified check for 25 per cent of the amount of the bid.

Arthur L. Humphrey, first vice-president and general manager of the Westinghouse Air Brake Company, has been elected president of the Union Switch & Signal Company in accordance with merger proceedings of the two companies, and will hereafter assume the executive responsibility of both offices. Mr. Humphrey was born in Erie county, New York, but his family moved to Iowa when he was less than a year old. At the age of 14, after the usual amount of country schooling, he struck out for himself, passing successively through the positions of store-hand, cow-boy, substitute cook, machinist apprentice, gang boss, mining engineer and general contractor—all in the new pioneer territory lying between the Missouri river and the Pacific coast. At the age of 22 he organized a general machine shop and foundry in Seattle, which afterwards developed into the present extensive Moran Iron Works. He then went into railroading and became constructing division foreman of the Mojave division of the Central Pacific, then master mechanic, and later superintendent of motive power of the Colorado Midland. In 1893 political urgency, due to Populistic activity, caused the business men of Colorado to combine and combat that influence in the Colorado legislature by electing a business man to the state legislature. Mr. Humphrey was chosen and elected, serving two active terms, one as speaker of the house. He went back to railway service, however, on the Colorado & Southern in 1899, and then went to the Chicago & Alton in 1903, as superintendent of motive power. He became western manager of the Westinghouse Air Brake Company in 1903, general manager in 1905, and vice-president and general manager in 1910. Air brake and block signal development in the control of railroad train movement has become so inter-related from an engineering standpoint that closer co-operation between these two Westinghouse interests has been inevitable for some years, and indeed was originally planned by the late George Westinghouse himself. Mr. Humphrey's broad experience as a railroad man qualifies him effectively for the new responsibilities assumed.



A. L. Humphrey

Steel Corporation Earns \$105,968,347 in Fourth Quarter

The United States Steel Corporation on January 30 reported net earnings of \$105,968,347 in the final quarter of 1916 and a balance for common stock dividends in this quarter alone which amounted to \$16.62 for each of the 508,302 shares. The full year's income, before accounting for sinking fund and depreciation requirements, was \$333,625,086, an increase of \$203,273,790 over the preceding 12 months.

The directors at their meeting declared the regular quarterly dividends of 1¼ per cent on the preferred and 1¼ per

cent on the common stock and an extra dividend of 1¼ per cent on the common.

The year's net revenue was more than twice that for the next best year, with \$160,964,673, and almost three times as great as 1915. The last quarter by itself exceeded the complete returns of 1914, 1911, 1908 and 1904. The daily earnings of the corporation in the last quarter were \$1,152,000, in the third quarter \$932,000, in the second \$891,000, and in the first three months \$667,000.

The balance available for common stock dividends, aggregating \$246,412,218, was equal to \$48.47 a share. The surplus after all charges and dividends was \$201,945,749, an increase of \$157,730,032 over the preceding year. The results of the year, with comparisons, are displayed in these tables:

NET EARNINGS BY MONTHS.

	1916.	1915.	1914.
January	\$18,794,912	\$1,687,150	\$4,941,337
February	19,196,396	3,638,578	5,655,611
March	22,722,316	7,132,081	7,397,433
First quarter	\$60,713,624	\$12,457,809	\$17,994,381
April	25,423,676	7,286,409	6,920,879
May	27,554,899	9,320,576	6,845,823
June	28,147,473	11,343,070	6,690,894
Second quarter	\$81,126,048	\$27,950,055	\$20,457,596
Half year	141,839,672	40,407,854	38,451,977
July	\$25,650,006	\$12,048,218	\$7,457,993
August	29,746,903	12,869,099	7,584,926
September	30,420,158	13,793,327	7,215,083
Third quarter	\$85,817,067	\$38,710,644	\$22,276,002
October	35,177,393	16,563,854	5,580,533
November	36,443,543	16,990,968	2,798,385
December	34,347,411	17,677,966	2,554,249
Fourth quarter	\$105,968,347	\$51,232,788	\$10,933,170
Year	333,625,086	130,351,286	71,668,615

INCOME ACCOUNT.

	Quarter ended.		
	Dec. 31, '16.	Sept. 30, '16.	Dec. 31, '15.
Net earnings	\$105,968,347	\$85,817,067	\$51,232,788
Depreciation, sinking fund, etc. . .	9,646,737	10,614,659	10,379,675
Net income	96,321,610	75,202,408	40,853,113
Int. U. S. S. B. & P.	5,639,648	5,601,233	5,687,777
Balance	90,681,962	69,601,175	35,165,336
Add to balance	129,626	794,057	794,057
Dividend, preferred	6,304,920	6,304,919	6,304,920
Dividend, common	6,353,782	6,353,781	6,353,781
Ext., common	8,895,294	5,083,025	
Surplus	69,257,592	51,859,450	23,300,692

YEAR'S EARNINGS.

	1916.	1915.	1914.
Gross	*\$1,250,000,000	\$726,683,589	\$558,414,933
Net	333,625,086	130,351,286	71,668,615
Surplus for dividend	271,631,895	75,789,175	23,496,768
Balance for common stock	246,412,218	50,560,695	11,722,909

* Estimated. † Deficit.

American Locomotive Company

In last week's issue announcement was made that at a meeting of the board of directors of the American Locomotive Company, held January 17, the following officers were elected, effective February 1: Columbus K. Lassiter, vice-president in charge of manufacture; Harry B. Hunt, assistant vice-president in charge of manufacture; James D. Sawyer, vice-president in charge of sales; Joseph Davis, vice-president and controller.

Columbus K. Lassiter, the newly elected vice-president in charge of manufacture, has been in the service of the company or its predecessors for twenty-two years. He entered the service of the Richmond Locomotive Works as chief clerk to the president of that company. He was later transferred to the American Locomotive Company's plant at Schenectady (about 1904) and served as mechanical expert for about six years, during the reconstruction of the plant. About seven years ago he came to New York as general mechanical superintendent, and at the outbreak of the European war was also appointed a member of the ordnance committee.

Harry B. Hunt, assistant vice-president in charge of manufacture, has been with the company eight years. He was born in New York and graduated from the Massachusetts Institute of Technology in 1897. He spent eight years in the operating and mechanical departments of the Erie Railroad and held the positions successively of mechanical engineer, assistant mechanical superintendent and assistant to the general manager. Since he has been with the locomotive

company he has served in the manufacturing, engineering and sales departments, and now returns to the manufacturing department from the sales department.

James D. Sawyer, the newly elected vice-president in charge of sales, has been in the service of the American Locomotive Company or its predecessors since 1898 and its manager of sales since 1907. He was born at Buffalo, N. Y., in 1875. He graduated from Yale in 1896 and entered the employ of the Brooks Locomotive Works at Dunkirk, N. Y., in August, 1898. He worked in various departments until in 1901, when the American Locomotive Company was formed, he became assistant to the second vice-president in charge of sales, with office at Dunkirk. He was transferred to New York in 1904 in the same capacity and held that position until 1907, when he was appointed manager of sales.

Joseph Davis, vice-president and controller, is promoted from the position of controller, which he has held since 1909. Mr. Davis was born in New York in 1875. He attended high school at Albany, N. Y., and was for three years associated with the controller's office of the Delaware & Hudson at Albany. He later spent three years in the accounting department of the New York Central at New York and then left railway service to run a ranch in Colorado. He entered the service of the American Locomotive Company in 1901 in the accounting department and became controller in 1909.

Berger Manufacturing Company Changes

The Berger Manufacturing Company, Canton, Ohio, announces the following appointments: R. W. Van Horn, who for the past six years has been connected with the New York branch in charge of the metal lumber department, has been transferred to the home office and placed at the head of the building material products' division. Previous to his connection with the Berger company, Mr. Van Horn was chief inspector of materials for the Wheeling & Lake Erie.

Norman A. Hill, until recently efficiency engineer for the Dupont Powder Company, Wilmington, Del., and formerly engaged in appraisal work for the public service commission in Maryland, has been appointed efficiency engineer, with headquarters in the home office of the Berger Manufacturing Company. Mr. Hill is a graduate of the University of Pennsylvania, and later completed post-graduate courses in both Pennsylvania and Columbia.

P. V. Stonerod, formerly inspector of steel for the Carnegie Steel Company, and for the past few years connected with the New York branch in the capacity of construction engineer, has been placed at the head of the sidewalk light department, and will be located in Canton, Ohio.

A. H. Bromley, Jr., contracting engineer, who for the last several years has looked after the interests of the Berger Manufacturing Company in the Cleveland territory, has been appointed chief engineer of sales department, and hereafter will be located in the Canton office. Mr. Bromley was at one time superintendent of the fireproofing department of the Vulcanite Paving Company, Philadelphia. He was later superintendent and engineer for the Chas. L. Pitts Company, contractors, Newark; concrete engineer of the Guarantee Construction Company, New York, and estimator and engineer for the Corrugated Bar Company, New York.

TRADE PUBLICATIONS

HIGH SPEED STEEL.—The Vanadium-Alloys Steel Company, Pittsburgh, has issued a folder descriptive of Vasco-Marvel, a semi-high speed steel. The folder contains much information of interest, together with the high speed steel standard classification of extras adopted July 22, 1915.

COCHRANE HEATERS.—The Harrison Safety Boiler Works, Philadelphia, has just issued catalogue No. 710, a one hundred-page booklet relating to the company's Cochrane heaters for steam power plants. The book takes up open feed-water heaters for atmospheric service; heaters and receivers for use with exhaust steam heating systems; valve-stack heaters (combined heater, separator and valve); metering heaters for determining boiler capacity and efficiency, and heaters for use with water softeners. It is well illustrated with pictures showing the details of the heaters and the heaters in actual operation.

Railway Construction

CHICAGO, MILWAUKEE & ST. PAUL.—This company is making preliminary surveys for a proposed extension from Amidon, N. D., to New England. It has not definitely been decided to build this line, nothing having been done beyond making the surveys.

FLORIDA ROADS (ELECTRIC).—Surveys are being made for an electric line, it is said, to be built from Tampa, Fla., south to Bradentown and Sarasota, about 55 miles. J. Graham, Bradentown, and J. H. Lord, Sarasota, are said to be interested.

GEORGIA ROADS.—Residents of Cairo, Ga., are said to be back of a project to build a line from Cairo north to Meigs, thence northeast to Moultrie, about 35 miles. T. Wright and W. B. Roddenberry, Cairo, are interested.

ILLINOIS CENTRAL.—This company has completed surveys for an extension from Dawson City, Ky., to Providence, approximately 17 miles. The new line will skirt the towns of Charleston, Beulah and Dalton.

KEWANEE & EASTERN.—The Public Utilities Commission of Illinois has granted a charter to this company to build a new line from a point in Rock Island county, Ill., just opposite Muscatine, Ia., through Kewanee, Ill., to a point near Streator, Ill., a distance of 120 miles. At present, however, only the stretch from Kewanee to Henry Junction, 42 miles, is planned. Contracts for this undertaking will be let in the spring. J. D. Wardle, chief engineer, Kewanee, Ill. (Mentioned in these columns November 3, 1916.)

MARYLAND-PENNSYLVANIA ROADS (ELECTRIC).—The Southern Finance & Construction Company, Nashville, Tenn., has entered into a contract, it is said, to build an electric line from Washington, D. C., north to Gettysburg, Pa., about 75 miles. J. K. Parsons, president, Wilmington, Del.; R. B. Herzer, secretary, Nashville, Tenn.

MONONGAHELA VALLEY TRACTION.—This company plans to build an extension from Lumberport, W. Va., via Ten Mile Creek to Dola, Brown and Wallace, about 9 miles; surveys have not yet been made for this line. The company has completed surveys, but will not build this year an extension from Wolf Summit to Salem, 8½ miles. Plans are made to build an extension from Bridgeport to Flemington and Phillippi, 20 miles, of which about 7½ miles to Flemington will probably be built during 1917.

NEW YORK CENTRAL.—See description of the Castleton cut-off on a preceding page.

SAVANNAH RIVER TERMINAL.—This company has located a line to be built wholly within the corporate limits of Augusta, Ga. The main line will extend from the intersection of McIntosh street and levee on west to eastern boundary (eastern corporate limits) on east, with branch lines connecting with the Southern Railway and with the August & Summerville in Washington street, and a branch line in Bay street. The grading and track laying is now being carried out by company forces. C. A. Wickersham, president, Atlanta; W. M. Robinson, Jr., engineer, Augusta. (June 16, 1916, p. 1353.)

WESTERN MARYLAND.—This company will carry out improvements, it is said, to provide a double track line, nine miles long, between Hagerstown, Md., and Highfields.

WEST VIRGINIA ROADS.—Contracts are reported let to Joseph Fuccy and to Dominick Fuccy, Weston, W. Va., to build a line from Camdon-on-Gauley to Williams river, 15 miles. The line is to be built for the Cherry River Boom & Lumber Company, Richwood, W. Va.

WINCHESTER & WESTERN.—This company is building a line from Winchester, Va., west to Wardensville, W. Va., about 35 miles. Grading work is reported finished on about 5 miles. W. B. Cornwell, president, Winchester, Va. (November 24, 1916, p. 967).

RAILWAY STRUCTURES

BALTIMORE, MD.—The Pennsylvania Railroad will build a new one-story warehouse 40 ft. wide by 200 ft. long, with the necessary clerical office at one end of the building at Thomas street, Baltimore. The office portion will be of brick; the warehouse will be of steel with asbestos protected metal siding, steel rolling doors, slag roof, cement floors and concrete trucking platform parallel with the track nearest the warehouse. The entire track layout at this location will be revised and improved curvature with radii of not less than 175 ft. installed.

CASTLETON, N. Y.—The New York Central has plans for a bridge across the Hudson river below Castleton. See an account of the proposed bridge and connecting railroad on a preceding page.

CONNELLSVILLE, PA.—The Pennsylvania Railroad has given a contract to David T. Riffe, Pittsburgh, Pa., for building a new freight station at Conneltsville.

GALVESTON, TEX.—The Gulf, Colorado & Santa Fe, the Southern Pacific, the Galveston, Houston & Henderson, the Galveston & Houston Electric and the county of Galveston, through arbitrators, have decided upon the type of construction for the new causeway spanning Galveston Bay, connecting the island and the mainland, which was badly damaged by the hurricane of a year ago. There are now 28 arches of 70-ft. span, which were entirely undamaged, and it is the intention to construct 84 additional arches, each with a span of 60 ft. The arch structure, when completed, will have a total length of approximately two miles. The estimated cost of this undertaking is \$1,500,000. Another item of \$140,000 has been appropriated for repairs to the Galveston approach, but this figure is subject to probable reduction. There will be 1,950 tons of steel reinforcing bars, and about 77,000 cu. yd. of concrete required. Bids will be called for in the near future, but as yet no definite date has been set. The Concrete-Steel Engineering Company, of New York City, is the consulting engineer.

LA GRANGE, GA.—The Atlanta, Birmingham & Atlantic will build a freight warehouse, it is said, and will also improve the driveways, trackage, etc., at La Grange.

MONTREAL, QUEBEC.—The Canadian Northern expects to start work about February 15 on a temporary station at Lagauchetiere street, Montreal. The proposed structure is to be of brick and terra cotta construction with stucco finish, two stories high, 106 ft. wide and 135 ft. long. The cost of this improvement will be about \$150,000. Bids for the work were received on January 6.

NORFOLK, VA.—The contract given recently by the Atlantic Coast Line to the A. M. Walkup Company, Inc., Richmond, Va., calls for building a brick passenger station on York street, Norfolk. The building is to be two stories high, 48 ft. wide and 132 ft. long. The work is to be started at once. (January 19, page 124.)

STEELTON, PA.—The Pennsylvania Railroad is enlarging the freight yard at Steelton at a cost of \$200,000. Part of this work is being carried out for the use of the Bethlehem Steel Company on land owned by the steel company, and part of the work is for the railroad on land owned by the railroad.

SUPERIOR, WIS., AND GREAT FALLS, MONT.—The Great Northern has awarded contracts to the Westinghouse-Church-Kerr Company, New York City, for the construction of a machine shop, 200 ft. by 288 ft., a power-house, storehouse, oil-house and miscellaneous buildings at Superior; all of the buildings will be of brick construction with concrete foundation. This company has also given a contract for a similar group of buildings at Great Falls, Mont., to the Grant Smith Company, Spokane, Wash. Work is now in progress.

TRENTON, N. J.—The Pennsylvania Railroad has given a contract to the James McGraw Company, Philadelphia, Pa., for the construction of two concrete bridges over Delaware and Raritan canal. The estimated cost of the work is \$150,000.

WESTWEGO, LA.—The Trans-Mississippi Terminal Railroad contemplates the enlargement of its yards at Westwego. The company also plans to transfer its roundhouse and machine shops from Gouldsboro, La., to Westwego.

Railway Financial News

BOSTON & MAINE.—The Commercial & Financial Chronicle prints the following outline of a new tentative plan of reorganization of the Boston & Maine:

"It is proposed that the new company shall issue \$17,962,000 of first preferred stock, \$3,149,800 of second preferred and \$39,505,390 of common with a par value of \$100. Holders of the present stock of the Boston & Maine would be required to pay an assessment either (a) through paying directly not over \$40 a share, for which they would receive an equal face value of new first preferred stock, or (b) by borrowing the amount of the assessment on certain terms from the underwriting syndicate, or (c) through surrendering 40 per cent of their present stock, retaining the other 60 per cent."

CHICAGO, MILWAUKEE & ST. PAUL.—This company has sold to Kuhn, Loeb & Co. and the National City Bank \$25,000,000 4½ per cent general and refunding bonds. Previously the company had sold \$18,089,000 4½ per cent bonds under the general and refunding mortgage and \$29,129,800 5 per cent bonds under this mortgage.

CHICAGO, ROCK ISLAND & PACIFIC.—Judge Carpenter, in the United States district court at Chicago, has approved of the terms of the settlement of the suit brought by minority stockholders against D. G. Reid and W. H. Moore, the terms of which were noted in the *Railway Age Gazette* of January 12, page 80.

DELAWARE, LACKAWANA & WESTERN.—See Pennsylvania Railroad.

LONG ISLAND.—A committee of the directors of the Long Island, consisting of President Ralph Peters, Herbert C. Lakin, August Belmont, C. M. Pratt and W. G. Oakman, has arrived at an agreement with the Pennsylvania Railroad for a plan of readjustment of the finances of the Long Island. The Pennsylvania Railroad owns \$6,797,900 of the outstanding \$12,000,000 stock of the Long Island. The proposals made to minority stockholders are, that the Long Island shall issue \$5,202,100 5 per cent debenture bonds and issue approximately \$25,000,000 common stock; the Pennsylvania is to take these debentures and this stock as payment at par for advances made to the Long Island and is to offer to minority stockholders the Long Island debentures par for par. The debentures run for 20 years. The Pennsylvania agrees to carry out its part of the proposal only if a satisfactory amount of stock of the Long Island held by others consents to the plan.

MARSHALL & EAST TEXAS.—This road, which runs from Winnsboro, Tex., to Elysian Fields, 90 miles, has been placed in the hands of Bryan Snyder, vice-president and general manager, as receiver on the application of the St. Louis Trust Company.

PENNSYLVANIA RAILROAD.—See Long Island.

PENNSYLVANIA RAILROAD.—Representatives of the Pennsylvania Railroad and of the Delaware, Lackawanna & Western have asked the New York Public Service Commission, second district, for permission to buy the capital stock of the Frontier Electric Railway Company, which operates an electric line between Buffalo and Niagara Falls. No order has been issued by the commission, the case being postponed subject to call.

VIRGINIAN RAILWAY.—Stockholders have voted to increase the capital stock from \$65,000,000 to \$75,000,000. The increase in preferred stock is \$6,000,000 and in common stock \$4,000,000, making total authorized preferred \$35,000,000 and total authorized common \$40,000,000.

WESTERN MARYLAND.—Stockholders have unanimously voted to approve of the merger of subsidiary lines with the Western Maryland, in accordance with the reorganization plan which became effective February 1.

PANAMA RAILROAD BILL PASSED.—The National Assembly has passed the bill authorizing the construction of the branch line of the Chiriqui Railway, from La Concepcion to the coast.